

MILITARY MEDICINE

ORIGINAL ARTICLES

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The Bio-Dynamics of Launch and Re-Entry*

By

JOHN LOTT BROWN, PH.D.†

(With six illustrations)

THE word "dynamic" as used in the theme of this conference is an exceedingly popular one. Unfortunately, with its popularity has come a considerable reduction of its precision. "Dynamic" is frequently used nowadays because it implies something good, something on the go, forward-looking and progressive, the antithesis of stagnant. In the somewhat more formal language of the physical scientist, the term is reserved for application to an area of physics which deals with the relations among force, mass, and the exchange of energy. The meaning of the term in the title of the present paper is intended to be a little closer to the formal meaning, than to the more popular one. In using the combined term, "biodynamics," it is my intention to imply that some of the forces under consideration are of biological origin and that some of the masses with which we are concerned represent part or whole of biological organisms.

Acceleration tolerance. Very large forces with which man has had little experience will be imposed upon the occupants of space vehicles during their escape from the surface of the earth or similar large masses. The practical requirements for escape with pres-

ent fuels dictate that relatively high accelerations be sustained over relatively short periods of time. An illustration of a changing acceleration pattern over a short period of time is presented in Fig. 1. The pattern illustrated is merely for illustration. It does not represent the result of any precise calculations for a specific vehicle. However, the nature of the changing acceleration, the maximum level of acceleration reached and the total elapsed time from beginning to end of acceleration are quite reasonable for the project of getting a manned vehicle into orbit around the earth or even for escaping the immediate vicinity of the earth on the way to the moon. There is no question but that a man, if provided with adequate mechanical support and restraining equipment, can tolerate accelerations such as those illustrated without injury, and without even serious discomfort.

If man is to return to the surface of the earth or to the surface of any other large body in space after having achieved speeds which are requisite to space travel, it will be necessary for his vehicle to be decelerated. Deceleration may also impose severe forces on the man, but the deceleration must be accomplished in order to reduce speed to ranges where a parachute can be employed or a landing can be accomplished by means of conventional aerodynamic control of the vehicle.

The ability of a man to tolerate forces of

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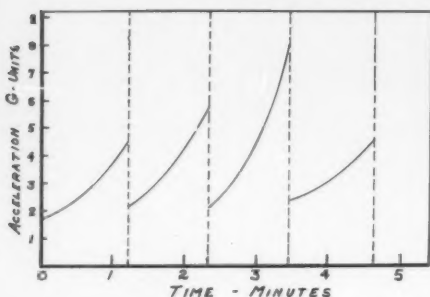


FIG. 1. An acceleration pattern for a multi-stage orbital vehicle.

acceleration varies considerably with the orientation of the resultant acceleration force with respect to his body. When the force acts to accelerate the body from the head to foot direction so that blood and internal organs move in the direction of the head, man can only tolerate 3 or 4 times the acceleration of the earth's gravity. If the line of action is reversed, his tolerance is increased to nearly twice as much. On the other hand, if the orientation of the resultant acceleration force is approximately perpendicular to the long axis of the man's body, his tolerance becomes very high. At the present moment it is not possible to state exactly what the limits of his acceleration tolerance in this orientation may be. Recent work at the Navy centrifuge in Johnsville by C. C. Collins and R. F. Gray has demonstrated man's tolerance to higher than twenty G for a period of several seconds. This is illustrated in Fig. 2. Both of the investigators who sustained this acceleration pattern feel that with slight improvements in support they could tolerate even higher levels. The nature of the support which was employed is illustrated in Fig. 3. It is a molded contour couch which was developed in the Langley Laboratory of the National Aeronautics and Space Administration. The form fitting character of this couch tends to minimize deformation of the chest cavity, and thus enables tolerance to higher levels of acceleration before chest pains are experienced or breathing is completely prevented. The ultimate limitation on time of exposure in this kind of a couch will un-

doubtedly be imposed by an inability of the subject to breathe during exposure to very high levels of acceleration. It may therefore be necessary to limit the duration of very high acceleration exposures to periods during which a space vehicle passenger can comfortably hold his breath.

The vibrations which may be encountered during the exit flight of a rocket vehicle pose a problem which has been given less publicity than the problem of acceleration. Rocket vehicles will undoubtedly expose their occupants to some vibration during exit. The human being has relatively low tolerance to vibrations with amplitudes of a fraction of a centimeter at frequencies from 5 to 100 cycles per second. Vibrations in certain frequency regions over this range can cause severe discomfort and injury or even death. At this point vibration does not appear to be a limiting problem. It is serious and must be considered, but adequate design and damping of vibrations should enable a solution of the problem.

Acceleration and performance. It should be evident at this point that if man is just to be a passenger in a space vehicle, accelerations and vibrations pose no important prob-

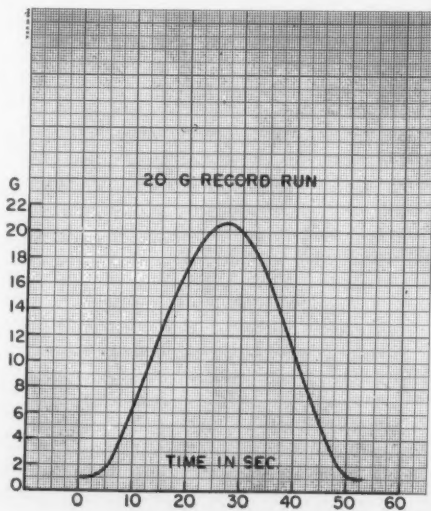
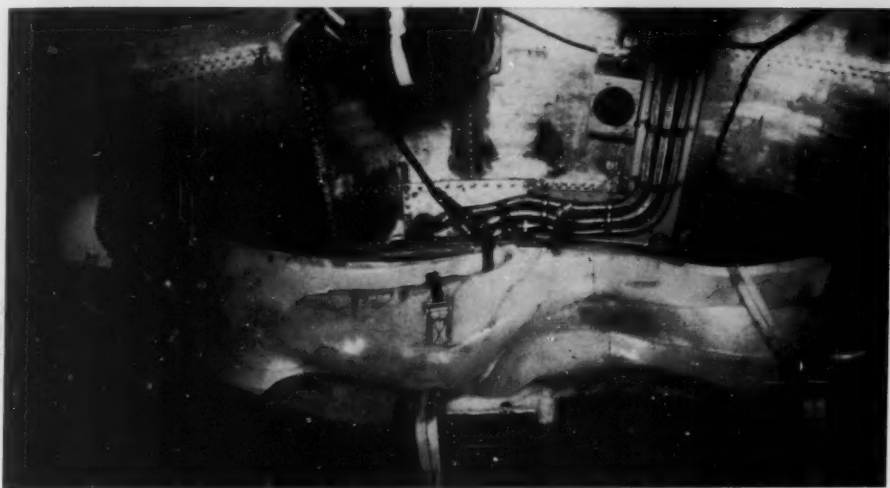


FIG. 2. An acceleration time history which is within man's tolerance limits.



Naval Air Development Command

FIG. 3. The National Aeronautics and Space Administration couch for high acceleration exposure.

lems. Important problems do arise, however, when we consider what the occupants of some of our pioneering space vehicles may be required to do. Man has some remarkable abilities which can be very useful in the control of a space craft. He can compensate for unforeseen contingencies such as those which have plagued some of our recent moon rocket attempts. In order to do automatically the kind of jobs that a man can do, elaborate computers which add weight and volume will be required. These will impose a severe penalty in terms of increased fuel requirements. It is therefore important, certainly in our earlier attempts, to use man's abilities to the fullest possible extent.

The adequate utilization of man's abilities presents us with a whole new set of problems. We are convinced that he can tolerate the accelerations and the damped vibrations which will be encountered in exit and that he can endure the accelerations to be encountered on re-entry, but we know little of his motor performance capabilities under these conditions. If he is to be more than a passive occupant of a space vehicle, what indeed can we expect of him?

The next step toward space. It seems likely that our next step toward space flight

will be made with the X-15 research rocket craft which has been built by North American Aviation. In Fig. 4 we see a photograph of a simulation of the cockpit of this vehicle. The pilot is confronted by a complex instrument panel which displays a wide variety of information. The pilot, who is shown here in a summer flight suit, will be clothed in a more restrictive full pressure suit. He must exercise control over his vehicle during most of its flight. He will have to control precisely such things as the angle of climb, the attitude of his craft, its angle of attack, and in future multi-stage vehicles perhaps even the time of initiation and termination of thrust from a final stage. This will be an imposing job which will require continuous concentration and precise control. As illustrated in Fig. 4, designers have already made the assumption that such precise control can be accomplished better during exposure to acceleration if the arms are supported and the hands and wrists manipulate special controls which differ from the conventional center stick. The pilot's job will be complicated by the fact that the response of his craft to control manipulations will change with the decreasing density of the atmosphere during an exit flight. By the

*Naval Air Development Command*

FIG. 4. A simulation of the cockpit of the North American Aviation X-15 with test pilot Scott Crossfield at the controls.

time he has reached an altitude of approximately 40 miles the air may be too thin for any control of the vehicle by changes in orientation of aerodynamic surfaces. Control of the vehicle's attitude will thereafter depend on the use of auxiliary control rockets. Control of such rockets is the purpose of the left hand control in Fig. 4. In an orbital vehicle the pilot will reach a condition after his last rocket has burned out where he is at constant speed and the centrifugal acceleration of his orbit just compensates the gravitational attraction of the earth. Under these conditions he may be required to modify his muscular responses considerably in performing precise control movements.

It seems reasonable to assume at the present time that in some of the earliest manned orbital vehicles, man will be expected to play an important role in their recovery. These vehicles will be decelerated in orbit and will begin to spiral in toward the earth. The pilot's job will be to control their de-

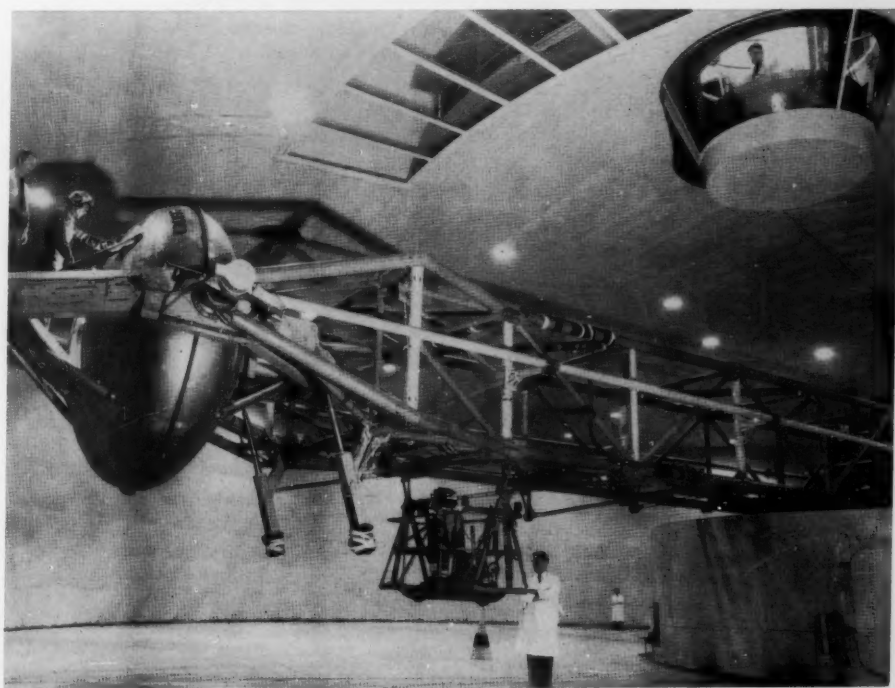
scend. There are many important considerations; deceleration of the craft must begin early, or the speed will be too high when the denser atmosphere is reached and excessive heating of the skin of the vehicle will result. Early deceleration can be achieved by presenting the vehicle to the thin upper reaches of the atmosphere in a "pancake" attitude which will present the highest possible drag. However, as the atmospheric density increases the deceleration of the craft will increase at an alarming rate if this attitude is maintained and the pilot must be very careful not to exceed the acceleration design limitations of the vehicle, not to mention his own limitations. To complicate his job he will have to get information from a variety of different sources. Special inertial instruments will have to be used where the atmosphere is too thin for conventional methods of speed and altitude measurement. At lower altitudes where accuracy is exceedingly important more conventional instru-

ments will probably be used. Just as was the case during exit, the response of his vehicle will vary continuously with increasing density of the atmosphere. The pilot's compensations for the sluggish performance of the craft at high altitudes will be completely inappropriate at lower altitudes. Conceivably, a slight deviation from optimum in a pilot's control may induce oscillations which will be reflected in the form of changing acceleration which may vary between 5 and 8 G in frequencies of nearly 1 cycle per second. This kind of acceleration exposure may last for up to 20 seconds, even if the pilot is lucky enough to succeed in ultimately damping it out.

The case for biodynamics. It is possible to balance the controls in such a way that the forces required to operate them are independent of the acceleration which prevails at any given movement. Unfortunately, this cannot be done with the pilot's limbs.

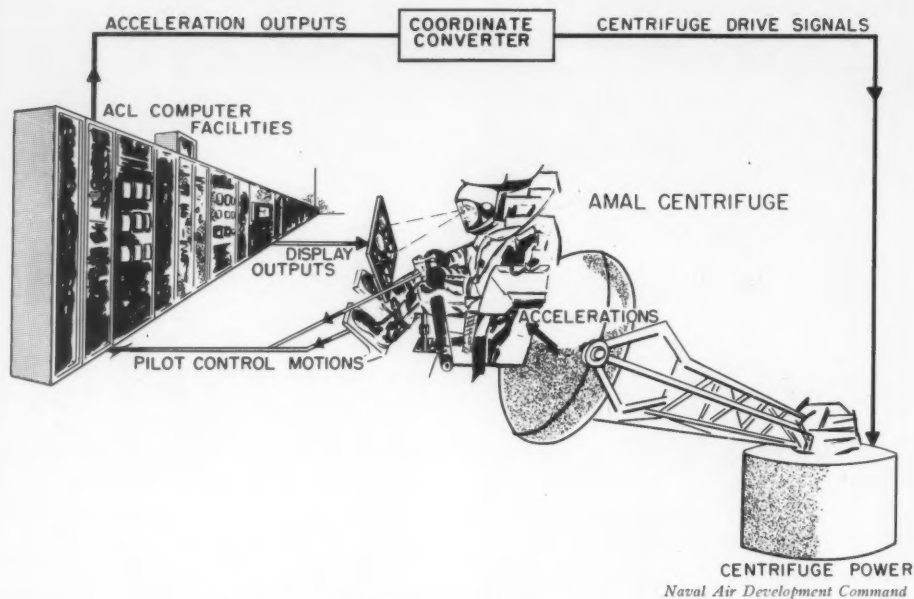
Fluctuations of acceleration will vary the effective-weight of his arms and hands and may result in inadvertent movements of his controls. During his re-entry into the earth's atmosphere it will be necessary for the pilot to forego all those adaptations which he was required to learn for appropriate performance under conditions of zero gravity. With each change the range of frequencies over which his muscles can be expected to exert control will undoubtedly change and so will the optimum characteristics of the controls he is operating.

If a pilot is going to be required to manipulate controls during changing patterns of acceleration complicated by changes in the response characteristics of his vehicle, it is important that the entire problem be subjected to a precise engineering study in order to achieve optimum design of control mechanisms and pilot restraint equipment. The complications of the problem are such that



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FIG. 5. The Navy's giant centrifuge at Johnsville, Pa.



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FIG. 6. Schematic illustration of the centrifuge, computer system.

it must be studied empirically under conditions which are as accurate and as precisely controlled as possible. Fortunately, the problem can be studied with the effects of acceleration included, in the Navy's centrifuge at Johnsville, illustrated in Fig. 5.

Investigators at Johnsville have already studied the pilot's control function in the X-15 under realistic conditions, including linear accelerations which will be encountered, using controls like those which will be employed in the aircraft. Fig. 6 illustrates schematically the way in which these studies were accomplished. The cockpit simulation which was shown in Fig. 4 was installed in the centrifuge gondola. Signals which resulted from pilot's control manipulations were transmitted to a large analog computer which calculated the responses of the aircraft and fed back appropriate signals to the instrument panel displays. Additional signals were fed back into the centrifuge control system so that the accelerations developed by the centrifuge were appropriate for the pilot's control manipulations, the

altitude, the speed of the vehicle and other conditions. At the present time projects are being conducted relative to systems even more advanced than the X-15.

Human adaptability, a mixed blessing. In spite of the tremendous potentialities of centrifuge studies for studying problems which man may encounter in space before he actually gets there, there is a real danger that our efforts may be inadequate. In designing our entries for competition with the Russians in the conquest of space, our engineers are required to apply precise quantitative engineering principles to all aspects of a given system except those which interact directly with the pilot. Here, man's tremendous flexibility and adaptability is our greatest problem. By observing such crude requirements as the directions in which man is capable of exerting movements, the distances he can reach, and the forces he can exert, engineers are building systems which any clever pilot, given appropriate training, can operate adequately in nine out of ten situations. Many of these systems are relatively

crude, however, and push the pilot to the near limits of his ability, even in static simulators. Any small unforeseen contingency may drive the pilot beyond his limits of ability and cause failure.

To some this may be regarded as a challenge, but even after we have done our utmost to match instrument displays and controls to the human pilot there will still be adequate challenge for even the most daring of men. We must increase our efforts in the systematic study of the dynamic relations between a pilot and his controls. In addition to the maximum forces he can exert and the range of movements of which he is capable, we must also study subtler characteristics such as the

frequency response characteristics of his limbs in various positions under various conditions of acceleration. The only alternative to this kind of study is a completely automatic system, and the development of such a system would perhaps unnecessarily delay our advance into space. If we are going to use the pilot most effectively we must conduct a thorough engineering study of his sensory and motor capabilities under changing conditions of acceleration and design the equipment which he will use accordingly. It will be far better to study him in advance of his actual mission, rather than after the importance of this kind of study is dramatized by tragic failure of our pioneering attempts.



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History of the First Survey on the Medical Effects of Radioactive Fall-Out

By

SAMUEL BERG, M.D.

THE harmful effects of radioactive fall-out are the cause of increasing international concern since the explosion of the second fission or hydrogen bomb on Bikini Atoll in the Marshall Islands on 1 March 1954, which resulted in the dusting of the Japanese fishing boat *Fukuryu Maru* with radioactive pulverized coral and the exposure of its crew to radiation.

Yet, radioactive fall-out was a matter of concern to the U. S. military even before the first nuclear bombs were detonated over Japan. When the effects of the Alamogordo device were noted, the desire to minimize fall-out was one of the factors which determined the height of the explosions over Hiroshima and Nagasaki. Furthermore, measurements of the extent of radioactive fall-out in both these cities were made, and its effects on humans in Nishiyama, a suburb of Nagasaki, were investigated.

Because this subject has attained such great importance, it is believed that an account of this first medical survey, which included adequate controls, should be published for historic purposes despite the practically negative findings at that time. In so doing, other events associated with the studies of the immediate effects of the bombs by *The Joint Commission for the Investigation of the Effects of the Atomic Bombs in Japan* (hereafter called The Joint Commission) will be mentioned. A brief account of the organization, personnel, materials and methods of The Joint Commission may be found in *Medical Effects of the Atomic Bomb in Japan* (Ashley W. Oughterson and Shields Warren; publisher: McGraw-Hill, New York, 1956, pp. 431-443).

The members selected by the armed services who subsequently served on The Joint Commission received their assignments soon after the bombings of the cities; but not until

29 September 1945, when Gen. MacArthur felt that his occupation troops could assure safety to this group, did they begin their formal investigations. By this time, about seven weeks after the bombings, The Joint Commission was able to study the important delayed effects of radiation, and to integrate these findings with those in individuals who died earlier, by means of tissues, sections and clinical data provided by Japanese investigators. Orders were to make as many pertinent examinations as possible under existing conditions and within a period of six weeks.

Colonel Ashley W. Oughterson (USA) served as Chairman of The Joint Commission. Captain Shields Warren (USN) was co-Chairman. Col. Verne R. Mason (USA) supervised the collection of data at Hiroshima, and Col. Elbert S. DeCoursey (USA) did likewise at Omoura and Nagasaki. The other officers were assigned as follows: (Hiroshima) Lt. Colonel Averill Liebow, Major Milton L. Kramer, Captains Calvin O. Koch, Philip J. Loge, and Jack Rosenbaum; (Omoura) Lt. Colonel George LeRoy, Major John J. Flick, and Captain Perry T. Thornton; (Nagasaki) Majors Samuel Berg and Herman Tarnower.

It might be mentioned that Omoura, 16 miles north of Nagasaki, was the seat of a magnificent Japanese Naval Officers' Hospital to which many of the severely radiated victims from Nagasaki were sent for special studies.

From October 1 to November 16 (1945), rather detailed studies were made on 800 hospitalized patients; routine general and laboratory studies on 13,000 ambulatory casualties.

Billeted with the Nagasaki unit were two naval officers, Lieutenant Commander Nello Pace and Lieutenant Robert E. Smith, who surveyed the entire Nagasaki area with

Geiger counters, extending the survey to the east and north-east (leeward) as far as Unzen, a mountain resort about 60 miles north-east of Nagasaki. Since they had begun this assignment in September, and the Unzen readings were made on October 27 and 28, it is fair to say that their determinations under the direction of The Joint Commission constituted the first extensive radioactive fall-out survey.

At this time, Captain Warren informed Major Tarnower and me about the presence of a reasonable amount of radioactive fall-out in Nishiyama, a farming and reservoir district to the east of Nagasaki just over Mt. Kompira. This area was contaminated by fall-out, but had been protected by the mountain from the heat and gamma radiations of the bomb. These conditions were fitting for a determination of the biologic effects of the ingestion of food and water contaminated by these radioactive particles, and, quite naturally, excited my interest, for I had been associated for 17 years with Dr. Harrison S. Martland, the pioneer investigator of such effects in radium dial painters.

When I asked if such a study could be arranged, Captain Warren replied that he and his supervising colleagues, being well acquainted with Dr. Martland's findings, had considered this, but felt that the time allotted for investigating direct radiation effects was too short to spare any for less essential studies. Furthermore, such a study would be incomplete without an appropriate number of suitable controls, i.e., individuals who had lived and worked under similar conditions of environment and diet but who had not been exposed directly to the bomb nor indirectly to its products, which would take still more time. I then suggested having my assignment extended to accomplish this study.

On reconsideration, the leaders of The Joint Commission decided that this project was worth the little extra time and effort, and arranged the following program:

1. Major Berg was to direct the hematologic studies, his assignment to be extended two weeks to ensure their completion.

2. Major Tarnower's assignment was ex-

tended two days in order to include routine physical examinations.

3. Four laboratory technicians were assigned for two extra days: CPhM James W. Blagg, PhM 2/c Clair Lohnes, PhM 2/c Morris Saltzman and PhM 2/c John J. McManus.

With few exceptions, most of the Nishiyama group and the controls were examined on November 16 and 17. Altogether, 79 individuals from Nishiyama (series X) who seemed most likely to have ingested contaminated food and water, and 50 individuals from adjacent areas (series A) who most certainly had not been affected either directly or indirectly by the bomb or its products, were brought to the Shinkosen Laboratory in Nagasaki for their examinations.

To state it succinctly, a critical analysis of the findings in both the Nishiyama and control groups failed to reveal any evidence of injury which could be definitely attributed to the radioactive fall-out from the Nagasaki bombing up to the time of the survey. Follow-up studies on some of the Nishiyama group, and on animals, failed to change this conclusion, as will be mentioned later.

Physical studies of the Nagasaki area were made by Prof. K. Shinohara, Department of Physics, Kyushu Imperial University (Nagasaki) and by Prof. Y. Nishina, Institute of Physical & Chemical Research (Tokyo). Quoting from the book *Medical Report on Atomic Bomb Effects* (edited by Dr. Masao Tsuzuki, Medical Research Council Japan, 1953, p. 53): "At Nagasaki, there was a west wind and a light rain in the eastern district. Relatively powerful radioactivity was proved at the Nishiyama district, 3 km. east from ground center. This district is located on the eastern foot of Mt. Kompira, which stands on the east side of the bombed area. The Nishiyama area was protected from the primary rays by Mt. Kompira. In the district, soil specimens had radioactivity 200 times the natural leakage of the electroscope. A soil specimen under a rain water pipe of a house in the center of this district was found to be about 2,000 times the natural leakage. The half lives of the radioactive products were

varied, 42, 44 and 75 days, etc. Beta and gamma rays were recognized, of the latter three kinds."

Oddly, a rain of oil accompanied the fall-out in Nishiyama and in the districts of Koba and Sandana just north of it. This was reported by many residents, who noted, soon after the bombing, an oily layer on grass, leaves and the surface of pools of water (*We of Nagasaki* by Dr. Takashi Nagai, published by Duell, Sloan & Pearce, 1951). Such was not the case with the Hiroshima fall-out, which, incidentally, was in an area exposed to the direct radiations of the bomb and so did not provide proper conditions for a survey of this type.

The reason for the fall-out of oil is to be found in Nagasaki itself. In this city were located the huge Mitsubishi Steel Works and the Urakami Ordnance Plant, both of which possessed large vats of oil for tempering metals. Hiroshima, on the other hand, was the largest military depot in Japan, with very few industrial plants using oil in its processes. This Nishiyama oil fall-out might be of importance in that its content of sulfur may have acquired induced radioactivity with a half-life of 14 days, due mainly to beta particles. This radioactivity is very small compared with that of fission products, but must yet be taken into consideration.

At about the same time, again quoting from the same page of Dr. Tsuzuki's book: "Medical surveys on the inhabitants of Nishiyama were done by members of Kyushu Imperial University. After two months, some persons were found to have leucocytosis. The first systematic test was performed in the beginning of October 1945; very many cases of leucocytosis were found among children under 15 years of age. Among the young and adult persons some leucocytosis was also found, but no abnormality was proved among the old persons, over 50 years of age. After 5 months, in the beginning of January 1946, the fourth systematic test was done. Among adult and old persons, then, leucocytosis was found, too. Now the cases with leucocytosis among children were decreasing. These persons with leucocytosis showed no other sub-

jective or objective symptoms or signs. The leucocytosis ranged from 20,000-40,000 per cmm. the maximum 48,000 per cmm. This fact may be explained as leucocytosis brought about by constant effect of beta and gamma rays, emitted from the ground, even in very small dose. Such a phenomenon has not ever been noticed in the field of radiation biology."

Although we found appreciable variations in the leucocyte counts (but not very marked), they were not any greater than the variations in the control group; furthermore, there were just as many relatively high leucocyte counts in the latter group as in the former. We were unable to obtain any published findings of a control study in the Japanese survey.

In September 1955, I wrote to Lt. Colonel Carl F. Tessmer (MC, USA), Chief of the Radiation Injury Section in the Armed Forces Institute of Pathology, Washington, D.C., requesting information about any follow-up studies of the Nishiyama group. Part of his reply is as follows: "The Nishiyama story is a very interesting one. I visited the area first in 1947 with Shields Warren, Neel, and Snell for the specific purpose of a hematologic survey, which was carried out in some detail. We obtained blood counts and some marrow aspirates, and also a number of animal specimens, the most formidable of which was from a goat which had existed in the area since the bombing. There were some initial counts shortly after the bombing that were in the normal range. There were some subsequent counts in perhaps the next year by Japanese which indicated a very significant leucocytosis. At a somewhat later interval, May 1947, when we made a careful check, the counts were again within normal range."

On reviewing the entire matter, we feel that there was no appreciable hematologic response to the fall-out in the Nishiyama area. And certainly there were no skin manifestations from beta effects, as noted after the detonation of fusion bombs.

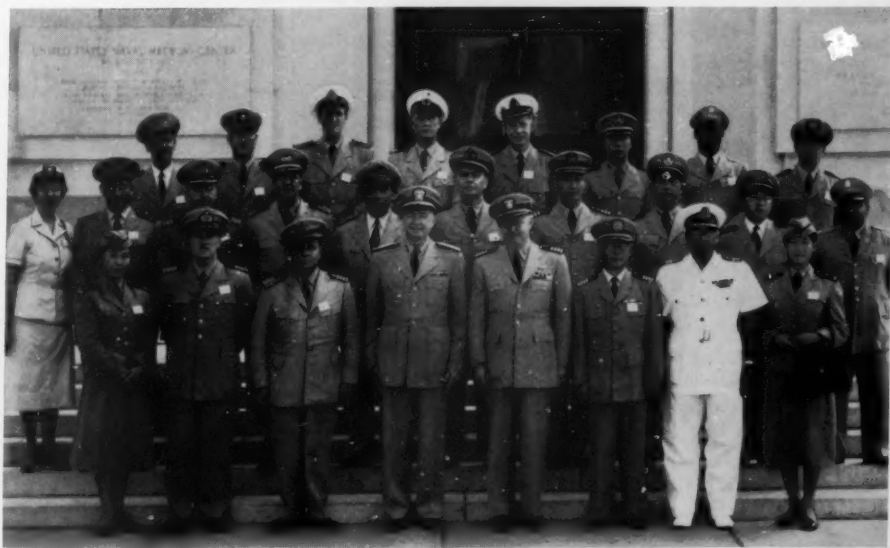
With the development of modern fission-fusion-fission bombs, which create a fire-ball about $3\frac{1}{2}$ miles in diameter and thereby pul-

verize and vaporize a tremendous amount of underlying stratum, thousands of tons of highly radioactive fall-out are produced. It seems that the appalling devastation, debilitation and deaths that would result immediately from a hydrogen bomb explosion hold less terror than the delayed biologic effects from its fall-out. Perhaps smaller fission bombs can be devised which, if detonated at a sufficient height, would prevent contact of the fire-ball with the earth, and so give rise to much lesser quantities of radioactive particles of much lesser size and weight and thus

much lesser speed of precipitation. It must be presumed that the proper authorities in the U. S. concerned with nuclear weapons are giving this matter serious consideration, for it was one of the factors which led to the detonation of the Hiroshima and Nagasaki bombs at 1800' elevation, so that any resulting radioactive fall-out would be relatively harmless, as was proved by the findings in the Nishiyama survey conducted by The Joint Commission.

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INTERNATIONAL MILITARY MEDICAL OFFICERS ATTENDING
POSTGRADUATE TRAINING AT THE NAVAL MEDICAL
SCHOOL, NATIONAL NAVAL MEDICAL CENTER,
BETHESDA, MARYLAND



U. S. Navy Photo

Front Row (L to R): Lt. (jg) Ok Yun, Korea; Capt. Miguel Versin, Chile; Capt. Arif Merkit, Turkey; Rear Adm. Bruce E. Bradley, Commanding Officer, NNMC; Capt. L. J. Pope, Commanding Officer U. S. Naval Medical School; Capt. Shoishi Ogawa, Japan; Surg. Commadore Mohammed Haque, Pakistan; Ensign Yon Kim, Korea.

Second Row (L to R): LCDR Clara T. Szczypin, NC, USN; Lt. (jg) Izzettin Baris, Turkey; CDR Rogelio Barroso, Chile; LCDR Ellul Torres, Venezuela; LCDR Hamdi Karabacakoglu, Turkey; CDR Augusto Bayro, Peru; CDR Ik Chang, Korea; Maj. Jose Sian, P.I.; Lt. Ango-Marie Gousse, Haiti; Lt. (jg) Shoei Tobe, Japan.

Third Row (L to R): LCDR Nejat Alper, Turkey; Lt. (jg) Sang Paek, Korea; CDR Helge Aasgaard, Norway; Lt. Luis Vizcarra, P.I.; CDR Hans Stemmann, Germany; CDR Lauritz Lund-Iversen, Norway; Lt. Luis Vizcarra, P.I.; Lt. Elliot Duchemin, Haiti; CDR Yun Pak, Korea.

Hospital Human Relations Education

The Use of Case Studies

By

LIEUTENANT COLONEL RALPH G. LE MOON, MSC, USA

THE case study method for human relations education is increasing in popularity in military and civilian schools and organizations. This may be whetting the appetite of some military hospital administrators to utilize the case study method in their hospitals. It is the writer's opinion that the curious administrator may profit from reading the experiences of others before attempting to institute this intriguing educational stimulant. This opinion is based upon the writer's utilization of the case study method in human relations courses for career classes at the Army Medical Service School during the past three years.

LIMITATIONS

No attempt will be made to conclude or infer that case studies in human relations education should or should not be used in military hospitals. Individual conclusions should be made after reading what the writer hopes is an impartial presentation of the method, based upon the reader's individual situation.

Apart from the relationship of case studies to human relations education, no attempt will be made to conclude that there should be an organized human relations educational program carried on in military hospitals.

This article is restricted to presenting

Opinions expressed are those of the author and in no way reflect those of the Department of Defense, Department of the Army, or the Surgeon General of the Army.

Lt. Col. Le Moon received his B.S. degree from the University of Pittsburgh in 1937 and Master of Hospital Administration from Baylor University in 1956. He has served in Army hospitals, The Office of the Surgeon General of the Army, and with the Army General Staff. He is at present an instructor at the Army Medical Service School, Fort Sam Houston, Texas, and has been appointed by Baylor University as an Assistant Professor of Hospital Administration.

some experiences in the use of the case study methods in human relations education in the hope that these experiences will help military hospital administrators decide individually whether to use such methods.

An exhaustive survey of literature is not being presented. Instead, representative schools of thought have been selected.

WHAT IS HUMAN RELATIONS?

Case studies under consideration in this article are those used in human relations education. It is felt proper therefore to first examine "human relations" and then case studies.

The phrase human relations has many meanings ranging from the "how to get along with people" type to the "effect of the organization on the way people behave with each other."

Diversity of opinions on just what is human relations is commented on by Burling, Lentz, and Wilson:¹

The application of scientific methods to the study of relationships among people is still so new that even its name means different things to different people.

Roethlisberger and others² describe the various factors which must be integrated into human relations when discussing human relations as not being exclusively conformity, absolutes, personality, efficiency, or science and then sums up one definition of human relations:

None of these dimensions can be ignored; none of these can be given priority or made exclusive or separate. The overdevelopment of any one forces a counterdevelopment in the other. To develop one beyond or apart from the others creates a condition of unbalance.

By "human relations" then, we shall mean a conscious development and practice of a skill by which one learns to relate himself better to his human, social surroundings.

INTERPERSONAL RELATIONS VS OR
= HUMAN RELATIONS

The struggle for an understanding of just what human relations is, is intensified when the phrase "interpersonal relations" is used as a substitute for or as a separate entity from "human relations." Davis³ suggests indirectly how these two phrases may have come into existence:

The term human relations applies broadly to the interaction of people in all types of endeavor—in business, in politics, in homes, and in schools. In business the interaction of people in relation to their work environment may be called employee human relations although the modifier "employee" is customarily dropped. From a more restricted viewpoint, human relations as an area of management practice is the integration of people into a work situation in a way that motivates them to work together productively, cooperatively, and with economic, psychological, and social satisfaction.

To pursue the "interpersonal relations" and "human relations" aspects more, the writers of a pioneer book in hospital human relations¹ found it necessary to clearly define their terms before proceeding with their discussion:

What we mean by human relations is the study of interpersonal relationships, which become typical among people who live and work (in concert).

This dilemma of inadequate definitions in the human relations area apparently forced both phrases to be inserted in the Department of the Army's pamphlet on interpersonal relations.⁴

Interpersonal relations are those interactions which take place between individuals and groups.

It is suggested that the material contained in this pamphlet be presented in a series of small homogeneous groups by a qualified person specially chosen for his ability to spark the *human relations program* with enthusiasm. (*Italics mine.*)

From the divergence of viewpoints and the babel of words, the reader by now may be wondering just what is human relations. The Army Medical Service School faced this problem when it was determined that human relations courses were to be instituted. The exact wording of the definition at the School varies as insight increases. At present, it is defined as "a field of knowledge devoted to understanding why people act as they do with

each other in a work situation, and making maximum use of that knowledge."

GOAL OF HUMAN RELATIONS EDUCATION

The case studies under discussion are those concerned with human relations education. To better understand the use of cases, it may be beneficial to examine the goals of human relation education.

Inasmuch as there is no one agreed upon definition of human relations, and confusion exists as to whether "interpersonal relations" and "human relations" are the same, related, or different, it may be presumptuous to try to describe the goal of a human relations education. True, there are many different definitions of human relations but we cannot overlook the fact that despite these differences in definitions, there are programs in human relations education going on right now. It is the purpose of this section to see what others say is the goal of such education.

In considering the training of supervisors in human relations, Roethlisberger⁵ says:

What are we trying to do? Surely we must hope that what goes on in these training sessions will make some difference in the way trainees will behave in the future, in the shop or office.

This difference in behavior is not a very satisfying standard to use when the results of a training program are evaluated. To digress, it should be pointed out that this writer is concerned with human relations *education* and not training. One main reason why the phrase "human relations training" was avoided is because of a general acceptance that the result of training is measurable while education as Whitehead defines it,⁶ "the acquisition of the art of the utilisation (sic) of knowledge," is not easily measured by immediate results.

To return to the search for the goal of human relations education, Davis³ enumerates the goals:

Three important goals of human relations as indicated in its definition are to get people (1) to cooperate (2) to produce, and (3) to gain satisfaction from their work.

Others define the goals in general terms which may be another way of saying one of the above two mentioned goals.

Ulrich⁷ gives a general type of goal:

The objective of administrative practices and human relations is to enable the student to grow. This involves both intellectual and emotional maturity. To achieve the objective of student growth, teachers must also grow.

McFarland⁸ defines the goal as changed behavior, thus agreeing with Roethlisberger:

Behavior is the supreme test of human relations skills. Changed behavior is the acid test of successful human relations training.

The goal of the interpersonal relation program in effect within the Department of the Army⁴ is not specifically spelled out but could be one of several:

The purpose of this pamphlet is to provide in a condensed form some well-accepted principles of human behavior and to show how an understanding of these principles and their application can help to bring about good interpersonal relations among hospital personnel and with patients.

Good interpersonal relations imply unity and cooperation.

Good interpersonal relations will help to unite the hospital personnel into teams whose members mutually support each other to accomplish their goal. By smoothing out and enhancing the work of the hospital personnel, good interpersonal relations have a direct effect upon the patients' recovery. They will provide an agreeable climate for the practice of medicine and technical skill; they will help the patient to have those desirable attitudes so necessary to him in combatting his illness.

Although one definition by Roethlisberger and others has been previously quoted, it is appropriate that at this time we examine some points⁵ Roethlisberger made which may be the meaning of all the previously described goals:

Our new objective is to assist people in learning from their own experience; we are no longer trying to change them—we are giving them the opportunity to change themselves if they wish by reflecting upon and reevaluating their own experience.

We are not interpreting their own experience for them; we are not telling them our personal experience instead we are allowing them to examine and reevaluate their own experience—we are not going to tell them what they should have learned from their own experience—each supervisor is going to have to find the particular answer which best fits himself.

We are setting the conditions which will facilitate this process of leadership.

As the definitions of human relations vary, so do the goals of human relation education. It seems agreed upon, however said, that one goal will be a change in behavior. Again we are plagued by the vagueness of an art as opposed to the exactness of science. We are dealing with emotions; entities which disappear when someone tries to capture them in cold print. Those connected with human relations education at the Army Medical Service School are faced with the inability to define satisfactorily a rigid mission, and the writer has had more success at "feeling" the goal than describing it.

DIFFICULTY IN OBTAINING GOALS

We are now proceeding with several definitions of human relations, and differently described goals for human relations education. As we mentioned before, however, human relations education programs are going on right now. So let us examine what some say about the difficulties in obtaining the goals of human relations education.

McFarland⁸ previously stated that the goal for human relations education should be changed behavior. From this vantage point, let us examine his reasons for failure in human relations training.⁸ He is describing a program which participants enjoyed but after which they reverted to their former habits:

The precise reasons for the failure in human relations training described in the above example would be complex. But it is clear that, in part, the trouble can be ascribed to the imposing of training on individuals from above. The needs were defined and determined by top management, not by the individuals themselves. Being loyal employees, they did their best to live up to the stereotype of "interested and cooperative employee" expected of them. They even enjoy some of the things that went on at the meeting. But back on the job with their day-to-day work they found they had brought no real skills useful in handling their problems. The layer of sweetness and light they were taught to masquerade under was punctured by the brutal realization that, after all, the guy they thought was a real heel was just that and they still didn't know what to do about it.

Roethlisberger⁵ feels that the cause of failure in training supervisors in human re-

lations is due to the difficulty of getting supervisors to learn what they believe about people is not always true:

But when the trainee goes back to the shop or office, he is under particular pressures, both internal and external, which determine his behavior there far more than anything which has gone on in the training meeting.

Very little is done about these matters in our training sessions.

In discussing learning by experience, we agree that what a supervisor learns from his personal experience is likely to be more important than what he gets from training meetings—yet we often ask our supervisors to apply rules and principles to their problems that ignore or deny their personal experience. It is difficult, however, to learn from experience the valid and useful lessons that we could learn. Experience has picked up inadequate generalizations, beliefs, and attitudes.

If this is so, the most difficult part of the program is how to get supervisors to learn what they believe about people is not always true.

The difficulty in obtaining goals is one the writer should refrain from commenting upon. Since the graduates of the courses at this School are scattered throughout the world upon completion of their particular course, attempts to evaluate the human relations course at this School is even more difficult than evaluating one conducted at a regular duty station.

The portion, however, of calling the experiences of the students into play for the purpose of reevaluation is one of the cardinal aims of the Army Medical Service School Human Relation Course.

CASE STUDIES

Some authorities believe the challenge in human relations education is to change the behavior of the participants. In this section, case studies will be examined as a means of obtaining that changed behavior. This section will review what some say a case study is, and then report on why case studies are believed necessary in human relations education.

WHAT IS A CASE STUDY?

Case studies presently used in military and civilian schools, and in industry run the gamut from brief, concise, studies to long,

detailed ones. Let us first examine what two military schools who have had extensively used case studies say about them.

Colonel Kowalski⁹ in describing the conduct of the Command Management School, Fort Belvoir, Virginia (now redesignated as the U. S. Army Management School) says:

Instruction is accomplished by four distinct methods—lectures, discussion groups, visiting speakers, and class seminars. Most instruction is effected through the case method. A series of cases, taken from actual situations at Army installations, is discussed thoroughly. Each highlights one or more practical problems in the field of Command Management.

The Industrial College of the Armed Forces¹⁰ also uses the actual situation type of case study:

The cases, each of which describes a specific situation in which people deal with each other to get jobs done, will serve as a springboard from which students will be able to exchange their knowledge with each other.

To complete the sampling of military thinking on what is a case study let us consider the Department of the Army's view⁴ in which "case studies" are inferred:

It is further suggested that the general principles presented in the pamphlet be liberally illustrated by examples of good or poor interpersonal relations taken from actual incidents in the hospital where training is being given.

So far we have established the point that case studies describe a specific situation but the type or length of case studies is yet unresolved. Davis³ summarizes current thinking on just what a case study is in explaining case training and the case method:

Generally defined, case training is the group discussion of a real-life situation within a training environment.

There are many variations of the case method. Cases may be simple and brief "case situations" or they may be long and involved. They can be true situations, reconstructed parts of several different situations, or fictitious. They emphasize analysis (analytical cases) or they stress executive decision and action (case problem). The involved, true situation, requiring executive action is the basic approach developed at Harvard. Case training may be used with large classes of 40 to 100 persons, but more participation and learning occur in the typical small classes of 10 to 25 persons. The term "case train-

ing" therefore has many meanings, and individuals should be sure they are talking about the same thing when they discuss it in connection with training programs.

It is often helpful in defining terms to define what it is not. Ulrich⁷ makes such a helpful statement:

Persons unacquainted with the case method often find it hard to realize that the cases are not used primarily as illustrations of "principles," "rules," or "points."

The wide range of case studies seems to preclude making a general recommendation as to what type should be used in military hospitals. The experience gained in this School has shown that the short type, truth or fiction or part of both, has been most effective. One controlling factor is the amount of time participants will have to discuss the study.

WHY A CASE STUDY?

After a detailed examination of many facets, the subject of "why a case study" shall now be considered. In defense of the detailed facets which have preceded the question at hand, it is believed that military hospital administrators may profit from what others have said about human relations education, and may more easily determine how the part (case study) fits into the whole (human relations education).

As before, some military viewpoints on "why a case study" will be examined, and then some civilian viewpoints will be considered.

Kowalski⁹ in commenting on the use of case studies says:

Each case presents every student with an opportunity to think for himself; to project himself into the situation and to think responsibly with regard to the particular situation and circumstances.

The Industrial College of the Armed Forces¹⁰ has a more elaborate description:

1. The case discussion method of learning will be used extensively in the Development of Executive Skills Unit. This method is receiving constantly increasing attention in the educational world as a highly effective means of adult education. It is a particularly effective way of learning in those subjects in which there are no precise answers, but

where the objective sought is a broadening of understanding.

2. The case method will be used in this unit to develop better insight into the problems of effective dealing with people. It is peculiarly well adapted to the learning process among mature individuals. The members of the student body have had a wide range of subjective experience in doing things through people.

The purposes of the case discussions are: (1) to study the behavior of people in real situations in order that we may increase our understanding of the significance of individual behavior; (2) to discover what we do not know about people; and (3) to become ever more aware that the people who surround us are individuals of widely differing reactions and perceptions and cannot be handled by formula.

A sampling of reasoning by civilian authorities on the "why a case study" could well start with a brief explanation by Gragg⁷ when he is discussing the need for case studies:

The mere act of listening to wise statements and sound advice does little for anyone. In the process of learning, the learner's dynamic cooperation is required. Such cooperation from students does not arise automatically, however. It has to be provided for and continually encouraged.

Another brief justification is advanced by Ulrich⁷ when describing the results of case studies:

A gradual recognition that administrative action occurs in a never-ending continuum of events and that few problems involving human behavior end in pat solutions.

A more detailed justification for the use of case studies is made by Maier, Solem, and Maier¹¹ when describing the value of the discussion of a case study:

Discussion stimulates a group to actively explore a problem from many points of view. What may be passed over quickly in reading can become an issue that participants in a discussion find to be basic to their everyday jobs. Discussion also reveals varied attitudes and these can become classified, evaluated, and modified through group discussion; reading, with no discussion, may have little or no influence on attitudes. Finally, a discussion permits persons to compare their thinking with that of other members of a group. It is important to know how his views compare with those of others, if he is to effectively relate with people in a community or organization.

Although positive statements are made as to the value of case studies, Ulrich⁷ feels

that there is much more to be known about changes of behavior before case studies and change can be positively linked together:

While classroom discussion undoubtedly brings about changes in student attitudes and increases their capacity for discriminating insights and judgment, it is difficult to identify any direct connection between these changes and the students' actual skill in situations requiring administrative action. If the student makes a conscious effort to bring newly gained understanding to bear upon events outside the classroom, he can modify and adapt his behavior accordingly. On the other hand, it is possible for a student to keep what he has obtained in class at a purely verbal level and to continue with his pattern of responses to actual events unchanged. Much more needs to be known about the factors motivating actual change in behavior as a result of education in this area. Essentially, there is no doubt that change depends on students sensing the need for it and recognizing its promise.

A common thread of justification woven into reasoning on why a case study should be used in human relations education is that it helps the participants gain insight into their attitudes and then relate these attitudes to attitudes held by others. This flushing forth of attitudes is not a cleansing action—no one says that any attitude is wrong—but is an attempt to help the participant grow by a more stimulating action than reading or being lectured to.

WRITING A CASE STUDY

In the event that a military hospital administrator desired to review case studies before he decided whether he would use them, where would he find a listing? Certain textbooks used in civilian universities have many types of case studies. A consultation with the local librarian will assist in compiling a list of such sources.

At the School, however, the type of case studies available in textbooks was believed inadequate. Logically, these case studies could be used and serve the purpose well. The writer, if nothing else, however, has learned to appreciate the inevitability of nonlogical behavior. He was not surprised to notice that military students just do not "warm up" to a case study on a safety pin factory.

A similar realization is described by Kowalski⁹ whereby the initial case studies for

the Command Management School were prepared by an outside civilian agency but with a military twist:

When the School was first established, Harbridge House was placed under contract to furnish the initial cases. Now the faculty, former students and guest writers are able to furnish appropriate cases.

The inability to describe just exactly what material should be in a case study, and a belief perhaps no exact format of material should be attempted is noted by Ulrich:⁷

One of the outstanding features of the case method is the infinite variety of material that can be adapted to it. At the same time, efforts to impose any specific form or any particular arrangement of cases are likely to yield extremely elusive results.

Within the scope of such a course, the instructor may wish to cover specific areas such as studies of face-to-face relations between persons at different organizational levels, or studies of interaction patterns throughout large-scale organizations. He may wish to introduce particular generalizations with these studies.

The question of who should write case studies is one which concerned this School.

Without strict scientific interpretation, it was concluded that students in this School's Human Relations Course were cooperative and vocal when they were discussing a case study written by one of their classmates than when they were discussing one prepared by an outsider. Annex A contains a typical student prepared case study. The Department of the Army⁴ has also encouraged submission of case studies by the participants:

Additional examples or case studies should be requested from those taking the training and a study of them made by the group or by committees in the group to determine what principles of good human relations were violated or what methods were applied in handling satisfactorily a difficult situation.

A case study may be written by an outsider or by the participants in a human relations program. This School has determined that although the technical refinement may be lacking in cases written by the students, the over-all goals of the Human Relations Course are better served by student prepared cases.

CONDUCTING A CASE STUDY DISCUSSION

The manner in which case studies are discussed is not easily spelled out. This educa-

tional stimulant is one that, like a loaded gun, must be handled with caution. Because of its very nature, there are built-in difficulties which should be known by those utilizing the case study. Kowalski⁹ briefly describes this situation:

Probably no other method of instruction is so demanding on its participants. No ready-made general themes are presented. There are no answers to memorize.

The Industrial College of the Armed Forces¹⁰ similarly describes difficulties in the discussion of case studies:

The discussion may cause feelings of frustration because of the lack of definite conclusions. This is inherent in the nature of the subject. Human relations is not a science in which precise mathematical answers may be expected.

No specific training program for those concerned with case study discussions is known to be advocated by civilians who have had extensive experience in this field. Conversely Glover and Hower⁷ advocate that there is no formula for teaching by the case method:

However much he may desire to be helpful, the experienced instructor finds it difficult to be helpful, the experienced instructor finds it difficult to tell the inexperienced instructor very much about how he really conducts classes.

This barrier is somewhat less bothersome when two people can sit down together and discuss at length various aspects of teaching, but when one person tries to put his ideas on paper for other people in a one-way communication effort, the obstacles to understanding are almost insurmountable.

In lieu of strict rules on how to conduct a case study discussion, it has been found necessary to discuss this from the related experiences of others in the hope that a little of this and a little of that will help sort out the pieces of the jig saw puzzle for the reader. At the risk of offending those educators who properly say that the student comes first, the writer will focus his attention on the instructor. In defense of this approach, it is submitted that this article may be of interest mainly to potential instructors.

ROLE OF THE INSTRUCTOR

Despite the unavailability of a formula for conducting a case study discussion, Glover

and Hower⁷ advocate some ground rules for the instructor.

As a number of us conceive it, teaching by the case method consists of considerably more than the assignment of cases and the application of techniques for conducting discussion. A large part of its success (or failure) depends upon the relation which obtains between the instructor and the students. This is particularly true of a course like "Administrative Practices." One of the instructor's main concerns, therefore, will be rapport with the class. This ultimately will depend upon the instructor's intelligence, patience, tolerance, and understanding as actually manifested by his daily behavior; but he can at least think in advance of the kind of atmosphere which he will strive to maintain during discussions.

Clearly, if the students are to take responsibility for analyzing and discussing cases, they need a favorite climate for doing so. This means a permissive atmosphere in which they feel free to put forth their ideas and their questions without the instructors reacting in the form of derision, blame, or authoritarian injunctions to think along certain lines preferred by the instructor at that moment. This free atmosphere will be fostered if the instructor makes up his mind to hear and to try to understand what students have to say, and encourage others to do the same. At times he may have to ask for amplification or restatement, and certainly what students say will often seem wrong or absurd; but in any event, he will try to grasp and respect whatever views the student tries to express.

Before other experiences are called forth, which may in substance agree with Glover and Hower,⁷ it is well to realize that the role of the instructor as typified by them is not agreed upon. Brown¹² was bemused by the use of the case method in educational facilities—the assertion that students should learn but not be taught. Now because the case method is advocated in management development for industry, he is aroused and believes that the case method people do not mean all they say:

I believe that they are carried away by their enthusiasm; that like recent converts, they are more zealous than the orthodox. In actual practice, I believe the case-method man, though he may give his charges a free rein as long as they gallop down the highway of truth will check them however gently, however perceptibly, but check them—before they crash into the pit of error.

Kowalski⁹ agrees with the passive role of the instructor but it should be emphasized that

he is writing about case studies discussed by senior officers and high ranking civilians who attend the U. S. Army Management Course:

The faculty serve as discussion leaders and stimulators—they never express the School's "official" thinking.

The Industrial College of the Armed Forces¹⁰ expresses a similar role for their instructors. Here again, however, the type of student participating in the discussion should be known—it is a very high level military school with senior officers as students:

The mission of the faculty discussion leaders is to facilitate the exchange of ideas among the students. They should not be regarded as experts who can give specific answers to problems raised. They will conduct discussions in a manner which will encourage all students to present their own ideas and enable the group to progress toward clearer understanding

The Department of the Army Pamphlet⁴ is silent on the point of the instructor's role in case study discussions.

Thus far no desirable characteristics of an instructor has been enumerated and it may be fruitful to refer to McFarland's⁸ description of a training director of a human relations program in civilian industry. Although this description is not specifically about the instructor in case study discussions, it may be of benefit in generalizing desirable characteristics:

Whether the responsibility for human relations training is assigned to a present employee or to an outside agency, or to both, the fundamental principle of importance is that the person who is sparking the operation be wisely chosen. It should be remembered that a man who can do this job well is rare. It is also helpful to remember that the person who can best develop human relations skills in others is *not necessarily* the individual who knows how to skillfully verbalize on the subject of human relations (*Italics mine*).

Despite difficulty in obtaining clear, concise "job requirements" for the instructor, there are the helpful practical suggestions made. One such listing of practical suggestions to be followed by the instructor is made by Ulrich⁷ and is summarized below.

1. The classroom activity is student-centered.

2. The instructor must realize that he cannot superimpose new attitudes upon existing ones.
3. Watch out for students who try to discuss the case from what they believe is the instructor's attitude.
4. Efforts at prompt clarification of the purpose of the course and the students' part in it are futile.
5. Developing rapport with the class is not essentially a matter of being on good terms with the students. It is the deliberate creation of an environment in which the student can learn.
6. The instructor resists student pressure to give answers until the group has developed enough mutual confidence so that students will not feel any compulsion to attach more importance to his answers than they appear to be worth.
7. The instructor resists the temptation to lecture to the students when they fail to bring up a point which the instructor considers necessary.
8. The instructor must recognize that the students will learn only at the level where they are, not at the level where the instructor would like them to be.
9. The instructor remains sensitive to class moods, continually judging where to turn his attention next among the students, when to develop or drop a subject under discussion, and when to drop one case for another.

The vague and challenging role of the instructor in case study discussions has often resulted in the writer's colleagues and students making jestful remarks about his being an executive because he gets everyone else to do the work. The writer has gained solace and comfort when he was tired and nervous after such "easy" instruction by reading the experience of Ulrich⁷ as an instructor:

Because of the many obstacles to learning the students bring with them, because the case method of instruction is unfamiliar to most of them, and because they have a wide variety of expectation about the objectives of the course, the first months of a course are likely to produce a great deal of confusion and frustration. The teacher is of course the most likely target for these negative feelings.

Only the most experienced teacher can get through this period without strain and self-doubts.

As in all challenging work, the more rigid the challenge, the sweeter the reward. In this vein, it is fitting after presenting such a drab picture of the instructor's role to consider his reward as Glover and Hower⁷ see it:

Perhaps all the foregoing suggestions sound difficult to carry out, and the task is not an easy one, especially for those of us trained in unilateral teaching, whereby instructors propound dicta which the students are expected to accept with little or no question. Each instructor has to learn by doing, pondering his own experiences, adapting his own methods to his situation, and developing a style of teaching which will inevitably be his own. If it were otherwise, good teaching would not be so rare. Initially it is a tough assignment, but generally it becomes easier. Many of us have found it a rewarding one.

Although no firm rules are available to assist the instructor on conducting case study discussions, the experiences gained by others help point the direction. Rapport with the students is needed. A permissive climate should be established. Great restraint must be followed by the instructor in handling the discussion.

Whether the instructor should "check" the students as Brown suggests, or permit free rein as others advocate, is a problem for each individual instructor. The writer pleads to being guilty of occasionally "nudging" the students and rests his defense on his analysis of the class mood.

IS A LECTURE NEEDED?

Does the instructor open a case discussion without any "warm-up period" of lecturing? This area too is one in which different opinions exist.

Fuller⁷ states that there is a real place for occasional short lectures and summary lectures when teaching by the case method. He does remind his readers that the first concern of the instructor about the use of the lecture is the same as that about the use of the case study—the relation between himself and his students. If this relation develops effectively, the development of other relations will be greatly facilitated. He does not furnish rules for the timing of lectures:

Neither the timing of lectures nor their content can be determined apart from the individual class. The general rule of thumb, however, might be roughly stated as "put nothing into the lecture that hasn't come out of class."

Brown¹² is much more positive in his belief as to whether lectures should be used.

But when I see the method (case method) urged upon industry itself, I feel that the time has come to strike one blow for the honor of principle, the utility of the accumulated wisdom of the ages, and the right of man to be taught.

This article may have misrepresented Brown¹² because of the danger of quoting out of context. Brown is not against the use of case studies but against their misapplication. Brown says:

The issue is whether principle is to be sought in cases by the student, or whether it is not better to begin with principle and elucidate it with cases. I take my stand on the latter.

A word of caution is necessary at this point on the word "principle." The writer has struggled to reduce the Human Relations Course at this School to written principles. The task thus far has been futile despite the pursuance of many texts which repeatedly state that the text contains "principles of human relations." Brown may not mean "principle" as a written statement exclusively, but may also have in mind the more enduring form of principle described by Whitehead:⁶

A principle which has thoroughly soaked into you is rather a mental habit than a formal statement. It becomes the way the mind reacts to the appropriate stimulus in the form of illustrative circumstances.

Backing away from the loaded word "principle" and returning to the question of whether lectures should be used in the case study method, the Industrial College of the Armed Forces¹⁰ state they have discussions prior to the case study:

The cases to be discussed will be issued in a folder at the beginning of the course. The lecturer will normally open the day's work with a discussion planned to relate to the case for discussion.

There are varied opinions on the use of lectures with the case study method ranging

from a very restricted use to a lecture before each case. This School is currently using a system which differs from those previously described. A student presents a brief discussion on the "principles" of a certain human relation area, then the case study is discussed. Following this, the writer in his role of instructor, summarizes. The summary, it must be admitted, is not stereotyped but is a spur of the moment "wrap-up" based upon the case study discussion and the class mood.

SUMMARY

The use of case studies in human relations education is receiving increasing attention from military and civilian schools and organizations. This increase in attention may have aroused the interest of military hospital administrators in the use of the case study method.

In the belief that to be "forewarned is to be forearmed," a sampling of the experiences of others in the use of case studies and some of the writer's experience of three years in the field has been compiled. The compilation has been from the viewpoint of presenting what the writer believes to be representative opinions in this field.

Rather than immediately discussing case studies, the writer felt that out of respect for their use in human relations education, the initial portion of the article should deal with the whole (human relations education) rather than with the part (case studies).

Following the discussion of what is human relations and is interpersonal relations different or the same as human relations, it was considered beneficial to discuss the goals of human relations education. This is so that all concerned could see the over-all end to which one of the means, the case study, is reaching towards.

Case studies are then considered by artificially dividing the subject into (1) what is a case study, (2) why a case study, (3) writing a case study, and (4) conducting a case study discussion.

The article is limited in that it makes no attempt to conclude whether case studies in human relations education should be used by

military hospital administrators. Instead, it is hoped that interested administrators will make their individual decisions after reading the sampling of representative opinions and then considering their own situation.

ANNEX A: HUMAN RELATIONS Case Study—Bureaucracy

SITUATION:

You are a medical officer who has just been assigned to the Emergency Room of the Admission and Disposition Office. During your first day business has been light, and you are just ready to leave when about ten dependents arrive, each wanting an examination.

During the next hour it seemed that for every one patient you treated, two more would enter the Emergency Room. Most of the patients were definitely not "emergency" cases. Upon talking to them you find that they did not take their minor complaints to the Outpatient Clinic during the day thus avoiding long waits or the making of appointments.

You find yourself wishing that you had not read an order by the hospital commander which stated that every person reporting to the Emergency Room will be examined.

REQUIREMENTS:

1. What bureaucratic problems exist?
2. Why do you think the hospital commander issued such an order?
3. Can anything be done to help this situation?
4. Can "emergency" cases be defined?

Lieutenant Colonel Ralph G. Le Moon was born in Larchmont, New York, May 20, 1914. He graduated from the University of Pittsburgh in 1937 with a Bachelor of Science degree and received the degree of Master of Hospital Administration from Baylor University in 1956.

He served as a Medical Department enlisted man from February 1941 until his graduation from Officers Candidate School, Carlisle Barracks, Pennsylvania, in July 1942. He then served as Personnel Officer and Registrar at the Camp Butner General and Convalescent Hospital, Camp Butner, North Carolina.

In 1946, he was assigned as Assistant Personnel Officer, Office of the Surgeon, Headquarters, Third Army, Heidelberg, Germany, and in 1947 became Personnel Officer, Office of the Surgeon, Headquarters, United States Constabulary. Following duty as Registrar and Detachment Commander at the 98th General Hospital, he returned to the United States for duty in the Office of The Surgeon General.

He then was assigned to the Army General Staff

in 1951 and was on duty with the Assistant Chief of Staff, G-1, until 1954.

Following his graduation from the Hospital Administration Course, Army Medical Service School, Colonel Le Moon became an instructor at that school in hospital administration. He instructs in disaster planning for hospitals, human relations, principles of management, and executive development. He has been appointed by Baylor University as an Assistant Professor of Hospital Administration.

He is a Nominee in the American College of Hospital Administrators.

REFERENCES

- ¹ Burling, T.; Lentz, E. M.; and Wilson, R. N.: *The Give and Take in Hospitals*, G. P. Putnam's Sons, New York, N. Y., 1956.
- ² Roethlisberger, F. J.; and others: *Training for Human Relations*, Harvard University, The Plimpton Press, Norwood, Mass., 1954.
- ³ Davis, K.: *Human Relations in Business*, McGraw-Hill Book Company, Inc., New York, N. Y., 1957.
- ⁴ Department of the Army: Pamphlet No. 8-13, *Interpersonal Relations in the Care and Management of Patients*, February, 1958.
- ⁵ Roethlisberger, F. J.: *Training Supervisors in Human Relations*, Harvard Business Review, 5:47-57, Sept. 1951.
- ⁶ Whitehead, A. N.: *The Aims of Education and Other Essays*, The Macmillan Company, New York, N. Y., 1929.
- ⁷ Edited by Andrews, K. R.: *The Case Method of Teaching Human Relations and Administration*, Harvard University Press, Cambridge, Mass., 1956.
- ⁸ McFarland, D. E.: *Bottlenecks in Human Relations Training*, Advanced Management, 2:13-16, Feb. 1955.
- ⁹ Kowalski, F., Jr.: *Sound Army Management*, Army Information Digest, 7:24-25, July 1956.
- ¹⁰ Industrial College of the Armed Forces: *The Development of Executive Skills*, ES53-1, Washington, D. C., 1952-1953.
- ¹¹ Maier, N. R. F.; Solem, A. R.; and Maier, A. A.: *Supervisory and Executive Development*, John Wiley and Sons, Inc., New York, 1957.
- ¹² Brown, A.: *The Case (or Bootstrap) Method*, Advanced Management, 7:11-13, July 1956.



Practical Therapeutics for Non-Gonococcal Urethritis

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NON-GONOCOCCAL urethritis comprises a large part of the out-patient military care in the Far Eastern theater, the average incidence is approximately one-hundred and twenty-five cases per one-thousand per annum. These statistics actually fail to represent the entire importance of the problem. Because of the erratic therapeutic results and the chronicity of the disease, each case requires repeated clinic visits and occasional hospitalization.

Although the literature¹⁻⁷ has many seemingly conflicting therapeutic results, the physician must integrate this information into a definite method of treatment. In order to help him, this paper should provide information about patient management as well as clinical observations of treatment regimens.

CLINICAL COURSE AND MANAGEMENT

Characteristically the disease begins two to three weeks following intercourse, nearly always unprotected. Also, rarely transitory non-infectious discharges are noted after excess alcoholic ingestion, but these are usually of very short duration. Generally the patient first notes a peculiar sensation in his penis, then develops a mucid or mucopurulent discharge which may or may not be associated with dysuria or frequency. This discharge is more prominent upon arising in the morning or may only stain the underclothing. Later, depending upon the severity of the condition, the discharge will persist during the day and become more profuse.

At this time the patients usually report on

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The opinions expressed in this paper are those of the author and do not necessarily reflect the views of the Department of Defense or Department of the Air Force.

sick call where the diagnosis of NGU is established. Based on a series of eighty placebo initially treated patients followed for ten weeks, the natural course of the disease was observed.² With symptomatic care and reassurance two-thirds of the patients will remit in four weeks. During the four week period some of the patients will experience repeated transitory exacerbations but they eventually clear. About five percent develop prostatitis and one-half of these also have epididymitis. Fifteen percent of the remaining twenty-eight percent of patients clear after antibiotic therapy or dilute intra-urethral silver nitrate instillations. The remaining thirteen percent of patients with a persistent urethral discharge require a complete urological investigation to rule out other urinary tract factors which may incite or be associated with the NGU discharge.

DISCUSSION

The etiology of NGU in the majority of cases has not been determined definitely and the therapeutic results of different antibiotic regimens have not been uniform.¹⁻⁷ Groups initially treated with placebos were shown to have the same clinical course as cases initially treated with antibiotics.² Since there is no specific therapy for all cases of NGU and the disease is generally self-limited,² it would seem logical to adopt a conservative method of management based on previous experience. Hospitalization has been of no value except when a complete urologic evaluation was necessary. Actually, the conservative therapeutic program was better accomplished on an out-patient status rather than in the hospital where the patient frequently developed undue concern regarding the severity of the discharge.

Patients with NGU characteristically are acutely interested and frequently somewhat frightened about their disease. The majority

develop the discharge several days before reporting on sick call. Some have noted a slight discharge for a few days which apparently disappeared, then recurred. However, many previously treated, remit temporarily, then relapse. These latter patients are understandably anxious because the discharge seems resistant to therapy and they fear it is an incurable disease. Our society encourages unfounded fears of disease related to the genitalia, not entirely based on medical but partially on moral reasons. Thus, it is of extreme importance to explain as accurately as possible to the patients about their disease and to establish a proper attitude toward the condition.

In order to obtain maximum cooperation the patient must recognize early that NGU, unlike gonorrhea, is generally a low grade infection which may have a prolonged course but has relatively few complications. Once this is established he is not as anxious about possible complications nor as fearful about a transitory relapse. He is required to avoid alcohol, coffee, and carbonated beverages in addition to abstaining from intercourse and manipulation of his urethra. Although the rationale is not clear, it has been the clinical impression of most authors dealing with NGU that these hygienic measures improve cure rates. Any medication's value is minimized and the importance of the hygienic regimen is accentuated. Thus, rather than relying upon the physician for a cure, he follows the regimen closely and feels that he is participating in the therapy. By this method the patient develops a positive attitude toward the disease. In time, the disease, generally being self-limited, will heal.

The patient's commanding officer may also need information regarding the course of the disease, especially concerning the lack of its seriousness or of its infectiousness to other personnel. Occasionally misinformed commanders may transfer men from vital positions or even suggest unnecessary hospitalization or quarantine for the management of this perplexing but generally mild disease. The situation generally can be readily alleviated once the condition is understood.

After the patient is properly orientated, he must have a predetermined plan for treatment. Since he realizes that an immediate cure does not always occur, he should have definite intervals for returning if the discharge persists. Reviewing previously treated patient's charts, it was noted that frequently various antibiotics were used in rapid succession with little effect upon the discharge. This practice, in our experience, is not valuable because remissions often occur several days or weeks after antibiotics are administered. Also, patients tend to become extremely agitated with repeated apparent treatment failures. Therefore, it seems wise to think of the disease in terms of weeks and to only change treatment every twenty to thirty days. Similarly the patient must be geared to this rate of thinking.

Antibiotics are frequently used for the treatment of this, as well as many other diseases. Although recognizing their extreme importance in modern drug therapy, we must also understand that they do occasionally produce toxic reactions and foster the development of resistant bacterial strains.^{8,9} Therefore, physicians should carefully evaluate each individual patient before beginning antibiotics in order to determine if they are really needed.

For symptomatic care we found Pyridium extremely helpful for dysuria and for increased psychological supportive care. Antibiotics, in addition to being used for complications, can be given to patients with persistent discharges. Silver nitrate (1:200) intra-urethral installations were frequently used successfully when systemic methods failed.

The infrequent patient with a persistent NGU discharge after an adequate trial with the conservative regimen requires careful complete urologic investigation. This represents a persistent urinary tract infection which must be studied because other elements may aggravate or secondarily produce the discharge. Further, a serious non-associated condition may be present but overlooked if all the urinary tract infection is ascribed to the NGU. Urinary tract neoplasms, congenital anomalies, calculi, or urethral strictures

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may produce an underlying infection. Also, tuberculous and non-tuberculous urinary infections other than of the urethra must be ruled out.

SUMMARY

Non-gonococcal urethritis is generally a self-limited disease which may have a prolonged course that is subject to remissions and exacerbations. Patients initially receiving antibiotics had no different cure rates than symptomatically treated patients. Since each physician must determine a definite system of treatment, this paper presents a therapeutic plan that was found very useful managing large numbers of non-gonococcal urethritis patients.

REFERENCES

¹ Crouch, Robert D.; Reese, James E.; Boudreau, Harold J.: Non-Gonorrheal Urethritis in Korean Rotates. U. S. Armed Forces Med. J., IV:1159-1165, Aug., 1953.

² Laidig, Clair E.; Berg, Perry: The Effect of Antibiotics Upon the Course of Non-Gonococcal Urethritis. J. Urol., 77:457-466, March 1957.

³ Parrino, Paul S.; O'Shaughnessy, E. J.; Green, Jack; White, John D.; Silson, John M.: Study of Non-Gonococcal Urethritis. Project No. 6-61-15-002, OTSG/DA. Research and Development Div., Office of the Surgeon General, U. S. Army, June 1955.

⁴ Willcox, R. R.: Non-Specific Urethritis, J. Royal Army Med. Corps, 101:196-207, July 1955.

⁵ ———: Researches in Aetiology of Non-Specific Urethritis, Brit. Med. J., no. 4852:13-15, Jan. 1954.

⁶ ———: The Etiology of Non-Gonococcal (Non-Specific) Urethritis. J. of Chronic Diseases, 1:381-391, April 1953.

⁷ Wolf, Frederick F.; Thoshinsky, Morton J.; Chodash, Sandford; Arrington, Joe O., Jr.: The Therapy of Non-Gonococcal Urethritis. U. S. Armed Forces Med. J., VII:850-864, June 1956.

⁸ Carrol, Grayson: Changing Flora in Urinary Infections in this Antibiotic Age. The J. of Urol., 73:609-612, Mar. 1955.

⁹ Kagan, B. M.; Faller, Lucille: Untoward Reactions to Antibiotics. Medical Clinics of North America, Vol. 39:111-124, Jan. 1955.



Tuberculosis in South Korea

Brighter Days Ahead

Reported by

DONALD R. HEIDEL, U. S. Army†

AN ARMISTICE agreement in 1953 halted the military fighting in Korea but the people of South Korea are still waging warfare on many fronts. The ravages of war left a nation plagued by overcrowding, malnutrition, sanitation breakdowns, and shortages of medical supplies, allowing disease to run rampant. Among the most dreaded of the war-spawned diseases is tuberculosis.

The incidence of tuberculosis in South Korea's 22 million population is 4%, or 13 times the rate of infection reported in the United States. Because of the need to support their families, many of the active cases cannot be isolated and, lacking the proper treatment, they serve as carriers. A bright spot in this dismal picture is the efforts of 300 voluntary workers who comprise the Korean National Tuberculosis Association. These dedicated people, although struggling themselves to live in an insecure economy, have sacrificed their time and efforts without pay to battle this disease.

The Korean National Tuberculosis Association was founded in 1950 as a voluntary organization of physicians and workers in an attempt to check the high incidence rate. In cooperation with the Korean government, the Association established treatment centers which furnish free chest X-rays and medical aid for active cases not bedridden.

Three treatment centers are now operating at Seoul, Taegu, and Kwanju. The clinics

follow a procedure of mass screening, case finding, and centralized treatment which was established for the Republic of Korea Army by the U. S. Army Advisory Group, Korea (KMAG). These procedures are successful in handling the tuberculosis problem in the military as well as among the civilian population. The Seoul clinic is located at Hwaehyun Dong, Chung-Ku, in a converted two story house. Each new patient is registered, given a medical examination, X-rays, and if found infected, is treated at the Center. Despite austere facilities and equipment, the doctors, nurses and technicians are able to process 100 patients a day.

As in the United States, the chief source of funds is the annual sale of Korean Christmas seals. Additional money from government subsidies, U. S. contributions, U. S. Korea-stationed personnel contributions, and

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Tuberculosis ranks high among the list of diseases in many of the nations of the world, and is particularly prevalent in the Orient where crowding, poor living standards, and poor sanitation prevail. Here we have the picture in South Korea where an attempt is being made to correct the situation.



U. S. Army Photo

FIG. 1. Seoul Tuberculosis Clinic. Miss Hae Ja greets patient reporting for treatment.



U. S. Army Photo

FIG. 2. Dr. Choi Suk Sancho examines patient at Seoul Clinic

the sale of literature on the subject of tuberculosis and the Journal of Tuberculosis subscriptions, aid in the work of the Association.

Controlling tuberculosis among the civilian population of Korea demands more than just X-rays and medicines. The Association is conducting an active educational program which furnishes free health educational lectures, demonstrations, and refresher courses for tuberculosis workers at government health centers. Magazines, films, slides,



U. S. Army Photo

FIG. 3. Dr. Kim Sung Chin cultures sputum.



U. S. Army Photo

FIG. 4. Dr. Choi discusses case with patient. Nurse Kim in Hwan (Rear) looks on.

posters, and literature are supplied to schools and civic groups to combat public ignorance and misconceptions about the disease.

Realizing that tuberculosis can be also controlled by prevention, the Association sponsors vaccination for primary school age children to protect this highly susceptible age group. This program, initiated first in 1950 by a group of Scandinavian doctors, is being carried on by the Association. Last year 80,000 children received vaccinations for



U. S. Army Photo

FIG. 5. Miss Kim and Miss Hae check the progress of a patient at his home.

tuberculosis. The results of this continuing program are paying off in a dropping incidence rate for this group.

The Association also furnishes grants-in-aid for tuberculosis research conducted jointly by federal and civilian medical organizations.

Funds have been set aside for three additional free clinics to be set up this year. The Association members hope that many individuals known to have tuberculosis and

anxious to receive treatment can now be cared for by the new clinics. Even so, many will still go unaided.

Despite the efforts of the dedicated and unselfish members of the Korean National Tuberculosis Association, the fight has only started to control the disease. With additional backing and the continued efforts of this group, the tide of tuberculosis in Korea someday will not only be stemmed but completely defeated.



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EDITORIALS

The Navy Doctor*

By LT. PATRICK S. PASQUARIELLO, JR., MC, USNR

IN NO branch of Medicine, Military or Civilian, can one find such diversified activities as are found in the Medical Corps of the United States Navy. Every possible specialty of medicine is practiced by Navy doctors, from Pediatrics and Obstetrics, through the various medical and surgical specialties, Aviation and Underwater Medicine, ABC Warfare, Tropical Medicine, and finally Field Medicine. No other branch of Military Medicine encompasses so many aspects.

The opportunities for a young doctor entering the U. S. Navy are limitless. A young doctor just out of medical college can intern at one of the top medical centers of the world, the most noted of which is the Bethesda Naval Hospital in Bethesda, Maryland. If he chooses otherwise, he can intern at a civilian hospital of his choice and then following completion of internship enter the Navy as a Lieutenant, Senior Grade. At this point in his medical career several avenues are opened to him. First, he may enter into a Navy residency of his choice and continue into the field of his liking either as a civilian or in the military. Second, he may enter into specialized military training in such fields as Aviation Medicine, Underwater Medicine and Tropical Medicine, to mention only a few. Last, he may simply enter the service to fulfill his two years of obligatory duty under the Selective Service Law.

* EDITORS NOTE: "The Navy Doctor" originally appeared in the July 1959 issue of the St. Joseph's Hospital Staff News, St. Joseph's Hospital, Philadelphia, where Lt. Pasquariello interned after his graduation from Jefferson Medical College in 1956. He is presently attached to the 2nd Marine Aircraft Wing, Cherry Point, N.C.

Residency training in the Navy is as good or better than residencies found elsewhere. There are no limitations as to the type of residency training desired for if the Navy has not the facilities to train her men in certain fields, such as Neurosurgery, then this specialized training is arranged at civilian hospitals.

There is never the fear of the low "resident's salary" so prominent in many of our leading teaching institutions, for the resident in many of our leading teaching institutions, for the resident in the Navy is paid according to his rank, as any other officer of equal rank. One of the most interesting points of this entire subject is the fact that recent statistics show that the number of board examinations taken and passed is markedly higher in the Navy, as in the other military branches, than in civilian residency programs. The exact reason for this is unknown but it certainly is a point in favor of the military residency program.

The specialized fields of Military Medicine are most interesting and most important in view of the recent modern trends. Here, I speak of Aviation Medicine and Underwater Medicine, especially. The former is becoming more and more necessary as we near man's first venture into space. Of course, we think that this is far away but mammoth strides are being taken daily and these first attempts are nearer than we realize. The questions of man's underwater endurance for periods of days, weeks and even months are being answered by Navy doctors in the recent undersea adventures of our Atomic submarines in the Arctic and Antarctic seas. Atomic, Biological and Chemical Warfare and all of their ugly and devastating possibilities are under constant investigation for protection of our nation, the advancement of recent developments and yes, even retaliatory efforts if they

need be resorted to. Tropical Medicine, a small but important facet of modern day medicine, is becoming more and more significant in light of the steady migration of other peoples into our country, especially from Puerto Rico.

Probably the most versatile group of Navy doctors are those who enter into the Navy for fulfillment of their Selective Service obligation.

The opportunities presented to this group are many and the duties that these men are to perform are quite diversified. After a short period of indoctrination, the doctor may be sent to any one of many duty stations. Included among these are sea duty abroad one of many types of ships from destroyers to air-craft carriers; duty with Marines, where oftentimes Field Medicine is practiced, or duty in one of the many Shore Dispensaries throughout the world. With this short but interesting tour of duty the Navy doctor can "see the world." In many instances this short period of time is a period in which the young doctor will "find himself" and enable him to take giant strides in a particular direction in his medical career. A young doctor who may have started a residency and then have it interrupted by his obligated service will in most instances be able to continue in his specialty during his short tour of duty.

In summary, therefore, the career of a Navy doctor is one which is interesting, exciting, educational and quite rewarding. And more important it gives one the opportunity to serve his country.

Fighting Tyranny

THE MEN who fought at Lexington and Concord were fighting exactly the same thing that we are fighting today—tyranny. They stood for exactly the same principle—human liberty. A hastily recruited force, armed but insufficiently, they more than proved their worth when, in the first skirmishes of our war for independence, they "... fired the shot heard 'round the world."

Today, the descendants of those embattled farmers stand side by side with the descendants of the men who opposed them, united once and for all and dedicated to the greatest task that has yet fallen to the lot of free men—the deliverance of the world from military and political domination.

The Minute Men would have had it so. The Liberals of the England of 1775 would have had it so. For the men of the Old Bay Colony, even at the very time they were

"Chasing the red-coats down the road,
And only pausing to fire and load,"

blazed the trail for liberty in England, and by their vigorous resistance opened the eyes of England to the iniquities into which her Teutonic King and his Tory servant led her. Today the new, the freed England, honors their memory.

They were brave men and bold, those men of '75. They were good stand-up-and-go-to-it scrappers. They made it possible for us to be here today, under this flag, embarked on this glorious enterprise, backed by the great people that sent us forth.

Let us see to it that we prove ourselves, in the tests to come, worthy descendants of such as they!

The Stars and Stripes, April 19, 1918



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Around the World

(Ser. III, No. 13)

By

CLAUDIUS F. MAYER, M.D.

MEDINA and Mecca, together with the entire *Saudi Arabia*, formerly had been very remote to western eyes, hidden behind the veil of legend and mysticism, until a few years ago when this part of the globe became the world's greatest oil producer. The development of oil in recent years also resulted in a spectacular development of this oriental kingdom in other fields of human activities, as revealed in a work issued by the Princeton press (K. S. Twitchell, *Saudi Arabia*, 3. ed., 1958). The country has no well established boundaries; hence, its size on the Arabian Peninsula is given in wide limits. For easy recall, we may take it for a land of some 800,000 sq. miles. Its main provinces are: (1) Hijaz, the coastal plain along the Red Sea, (2) Asir, continuation of the coastal plain to the kingdom of Yemen, (3) Nejd, the sedimentary plateau or highlands at the heart of Saudi Arabia, with Riyadh, the capital city, and (4) Hasa, the eastern province along the Persian Gulf.

The country has many fluctuating levels, and a wide divergence of climate. Along the coastline of the Red Sea, the humidity is very high in the summer, and people sometimes feel as if they were in a Turkish bath. Five miles inshore the humidity is low. In the highlands a reading of 115°F in the summer and an occasional freezing in the winter is observed. Generally, the country is arid. There are only 6,614,000 inhabitants of Saudi Arabia of whom 78% are *nomadic and Bedouin*; among them, 12% are farmers. The other 22% are city dwellers (chiefly since 1933 when the first oil concession was signed by the King of Arabia). Less than 2% of the land is under cultivation, mostly by means of artificial irrigation, the method of which has changed little since the days of King Solomon.

The *irrigation in Saudi Arabia* produces grass very quickly. But an excessive irrigation also has its dangers. Salt crusts are produced, and in parts of excess water malaria mosquitoes propagate, making some oases practically uninhabitable. Moreover, the irrigation ditches give opportunity for the settlement of snail colonies in the water, and thus the blessing of civilization becomes also the promoter of bilharziasis, the worm disease whose main host is the snail. The most important crops of the country are dates, sorghum, rice, some coffee from Asir, qat (*Catha edulis*) (which is chewed for its narcotic effect), fruits, etc. At other parts of the country, poultry is raised. A great source of wealth is the livestock (camels, sheep, goats, cows, horses). The importance of the camel is now pushed back by the increase in motor transportation. Minor economic resources are fishing, pearl-diving, weaving, pottery, and boat building.

The oil wealth of the country has also resulted in the *improvement of roads and transportation*. This is partly due to the growing importance of the Mohammedan pilgrimage to Mecca. Thus, in 1957, more than a million faithful pilgrims travelled these roads. Since 1951, there has been railroad construction, while air service has made enormous strides and has become essential in long range travel.

The important centers of the *Saudi Arabian national life* are Mecca, Medina, Taif, Jidda, Riyadh, Hofuf, Dhahran, and a few other towns. Mecca, with its great mosque and the venerated K'aba meteorite is the target of all pilgrims. Many of them arrive at Jidda, the Red Sea port, which is connected with an excellent asphalt road of 46 miles' length with the holy city. At Mecca there are two large hospitals for the care of the pilgrims. Much of the progress in the *matters of health and sanitation* has been made in

connection with the medical organization of the pilgrimages. Jidda, which is also the industrial center of western Saudi Arabia, has built modern quarantine stations for the visitors. These opened in 1956. The quarantine stations are on two islands in the inner harbor, and they can take care of 3,000 pilgrims at a time. Nobody can leave the country or enter it without the necessary medical injections required by the new laws, since the government's policy is to prevent the former terrible epidemics by prophylactic shots.

Riyadh, the capital, has been also expanding tremendously. Parks and gardens are greatly extended, and the streets are widened. The Arabian Ministry of Defense built a *military hospital* here and at other points; also mobile clinics, and other medical facilities. A large modern hospital is also being constructed in Taif, the summer capital of the Hijaz province. Dhahran, the headquarters of the American Oil Company, has a population of 12,500; it is a newly built town, about 5 miles from the Persian Gulf. It has extensive shops, offices, storehouses, and also a hospital. The food for the inhabitants is largely imported from America.

The annual budget of the *Saudi Arabian Health Ministry* amounts to ten million dollars. The various hospitals have a total number of beds up to 7,000. In Jidda, privately owned nursing homes are also available. The official program of medical organization calls for the construction of 22 more hospitals, providing an additional 6,372 beds, 60 clinics, 25 mobile units, and a serum manufacturing plant. At the end of 1956, 65 government sponsored hospitals, 10 private hospitals, 3 military hospitals, 78 clinics, and 21 mobile units were in operation.

Civilization's bad effect in the *promotion of bilharziasis* is evident in Saudi Arabia and elsewhere where people are digging irrigation canals to increase food production. Bilharziasis affects some 150 million people throughout the world, in a broad belt extending from Japan through Iraq and Africa to South America. Second in importance to malaria as a parasitic disease, the bilharziasis range is extending in proportion as more

land is brought under irrigation. A measure intended to improve the lot of the agricultural community in underdeveloped countries. Control of bilharziasis is theoretically simple to achieve, but in practice it is attended with the greatest difficulties. The World Health Organization has paid much attention to this disease, and its recent booklet describes the problems and outlines the work that has been done so far. It contains a full account of the *bilharziasis project at Leyte* in the Philippines.

Bangkok and Thailand organized its first school of western medicine in 1889 in the newly opened hospital which was named after the favorite son of the Siamese king, the Siriraj Hospital. The course was to include 3 years of instruction. The interest of the Siamese was not great in western medicine, and the first graduation created only 9 local doctors (one of them is still alive). The school was reorganized in 1900, and in 1916 it became part of the *Chulalongkorn University*. Further help came from the Rockefeller Foundation, and a second school opened in 1947. A few years ago, the objectives of the country's medical education were revamped by a *National Conference on Medical Education*, which recommended appropriate ways and means to provide the 22 million people of Thailand with adequate medical service. The long-range plan calls for a doctor-inhabitant ratio of 1:4,000, which requires 8,000 additional doctors for Thailand by 1978. With an additional three medical schools—one to be created by 1964 in Chiangmai—the expectations may come true.

During the last decade, *India* has been visited by several *epidemics of encephalitis* due to some viral strains. These epidemics include (1) the polio epidemic in Bombay in 1949, (2) the Jamshedpur fever and the "mysterious disease of Delhi" in 1954, (3) the Japanese B encephalitis of the North Arcot District in 1955, and (4) the Kyasanur Forest disease in Mysore State in 1951. The *Jamshedpur fever* occurred in three clinical types: fulminating, toxic and the dengue type. The fulminating form caused three out of four people to die, usually with the signs

of marked respiratory failure. The mystery disease of Delhi and of Lucknow was supposed to be identical with this fever. The disease is caused by a virus which is different from the virus of the Japanese B encephalitis. It is probably carried from person to person in the same way as the virus of poliomyelitis. The *Kyasanur Forest disease* was seen in March 1957 in a number of forest monkeys in the Shimoga District of Mysore State. It seems to be a new disease in India which has a pathological picture very similar to that of the Far Eastern type of epidemic hemorrhagic fever. Indeed, its cerebral symptoms are only accidental, and it should be classified with the well-known forms of epidemic hemorrhagic fever.

Recently, the entire world witnessed an increase in the *outbreaks of staphylococcal infections*. Analysis of these cases shows that most of them are due to a new antibiotic-resistant strain of *Staphylococcus aureus*. A study of the epidemiology leads to Canada as the original source of the new strain of this dangerous coccus. From that country, it spread to the United States. It is also surprising that Australia had also given birth to the new strain of *Staphylococcus*, and from there it spread to New Zealand. This coccus is known as one of the phage type 80/81. Strains of this type are of high infectivity, and they may often be of high virulence, with predilection for such sites as the skin, the respiratory tract of the newborn, the puerperal breast and the respiratory tract of the adults damaged by influenza virus infection. Let us add here that in England a committee of the Medical Research Council organized a symposium on this important subject, and published its proceedings under the title *Hospital Coccal Infections*, which clearly shows how widespread this infection is in the operating theaters and in wards.

One of the truly frontier areas of Australia is the *Northern Territory*. In the past, this territory was practically without any medical service. Now, the conditions are different. The Territory has an area of over half a million square miles, and it takes up one-sixth of the total area of Australia. The

total population of this part of the continent is only 33,000, which also includes almost 16,000 aborigines. Half of the population is living in towns, which makes the "outback" areas of the Territory sparser in people. Darwin is the administrative center, and other towns are Alice Springs, Batchelor, Katherine, and Tennant Creek. The people are chiefly cattle breeders and miners. Recently, rice-growing is also being tried. The loneliness of the remote inhabitants is abolished by the various household gadgets of our modern world, and by a sound and reliable health service. Each of the main centers of population has a well-equipped hospital, and the medical officers, who are chiefly concentrated at Darwin, and at Alice Springs, are paying regular visits to the other centers.

People from remote areas are brought to the hospitals in case of great emergency, but they are visited regularly by the medical officers using aircraft of the *Aerial Medical Service*. A *Central Laboratory at Darwin* provides facilities for pathological examinations. Twelve miles from Darwin is situated a leprosarium for the Territory. Much of the medical activity is, of course, of a mobile character. The *Aerial Medical Service*, which is in close cooperation with the Royal Flying Doctor Service, is the only means for transportation in the wet season in this tropical territory when at most places the surface travel becomes impossible. During 1957, 520 patients were brought into city hospitals by the aircraft ambulances. Major role in the health service is also played by the School Medical Officer. In spite of the tropical climate, endemic tropical diseases are few in number.

In April this year, a *centennial conference* was held at Edinburgh University to honor the *memory of Darwin* who was a medical student at that university for 18 months. Darwin's biological studies, as well known, opened also new pathways for the scientific study of social life, and they contributed much to erase the distinction between the natural and social sciences. At the centennial conference a number of distinguished speak-

ers pointed out the many correlations of biological, social and historical sciences, although they seemed to agree that a dialectic approach in biology would have disastrous consequences.

An *atomic hospital* opened in Paris where medical research is reserved for the study of the effects of atomic radiation. The hospital is located at Orsay, just 3 Km distance from the French Atomic Center. It is dedicated to Frédéric Joliot, discoverer of artificial radioactivity. The nearness of the hospital to the center is logical.

Traffic accidents in European countries often are the results of the driver's consumption of alcoholic beverages. In France, 50%-60% of the fatal accidents (or even 80% of them around Paris) are the fault of drivers who are under the influence of alcohol. This "influence" is a very flexible term, and many people try to make the definition objective and standard. Last October, the French Congress against alcoholism suggested that 1 gram of alcohol in a liter of a person's blood should be accepted as absolute evidence that he is under the "influence" of alcohol. Several members of the French Academy of Medicine support the 1:1000 degree of alcoholism as the borderline at which most people (about 95% of the tested drivers) will have trouble in the execution of some psychotechnical tests. Of course, sensitive individuals may become "drunk" or "elated" by much less alcohol in their blood (as little as 0.5 g per 1000 ml), while habitual drunkards often have no trouble even after the consumption of excessive amounts of liquor (as the 1950 International Conference on Alcohol and Traffic Accidents reported at Stockholm). All experts point out that the traffic menace is not the dead-drunk, but the *social drinker* whose resistance to alcohol may also vary according to his physical fatigue, mental stress, emotions, etc.

Now, to continue the *information about Russia* which we started last month; due to the industrialization of the country, since 1920 on, the *population in the cities* has been rapidly growing, and the rural population has

been decreasing. As a result of this, many small provincial towns became large cities, and the previous large cities expanded like mushrooms after a rain. Since 1928, about 618 new cities have been founded in Russia, most of them in the industrial areas (such towns as Angarsk, Balkhash, Igarka, Bratsk, etc.). In 1913, Kramatorsk was only a small provincial town with 13,000 inhabitants; now, it has 117,000 persons. In the Ural area, about 70 new cities were built, among them the great Magnitorsk, a center of smelting, which now has 284,000 inhabitants, while in 1926 the town was not even on the map. In the Far East, such a big town is Komsomolsk, erected after 1931. Another miracle town is Karaganda in Kazakhstan, which was nothing in 1926, and now it has 350,000 people. The most northern town of Russia is the ice-free harbor Pechenga, the most easterly is Omsukchan in Yakutia, and the most southerly is Angren, a mining center in Tashkent.

Yet, with so many towns, there are *still some nomads*, though the Soviet Union denies it. These are nomads because the method of husbandry puts them on the road roaming. Yet, even at such agricultural areas, posts have been established for the welfare and health of the shepherds and of the grazing animals. Even these migrant folks are now centrally regulated by the administrators of a kolkhoz or sovkhoz. (In a recent issue of the "Krokodil," a comic magazine issued weekly by the Pravda, I saw a cartoon depicting a shepherd who, at the side of his herd was riding along on a motor cycle equipped with shortwave radio and other gadgets of comfort, while the herd was actually led by a big black ram.)

Climatologically, the U.S.S.R. has a great variety of skies, with the exception of the tropical climate. This wide range is also manifested by a richly variegated landscape. Its great transverse expansion makes Russia also a *land of continental climate* in its territories situated in Asia. Here, the annual precipitation is below 150 mm. The continental character is also manifested by great extremes in temperature, when, e.g., in

Yakutsh the July temperature averaged 19.2°C , and the January cold was an average of -43.6°C . The recent great construction of irrigation canals and the reconquest of the desert for agriculture was still unable to change the character of the local climate.

A huge area of European Russia, and almost the entire Siberia, with the exception of its southwest corner, is covered with *fir-tree forests (taiga)* while above the Arctic Circle only treeless tundra is found, with moss, dwarf shrubs, etc. In the tundra area the winter lasts 8-10 months, and produces just a little snow, although the temperature ranges between -20°C and -50°C . This is the land of Polar night when the sun never comes above the horizon, whereas the summer is short, though the sun is shining day and night. The winds are stormy, especially in the winter. The surface of the tundra area is always frozen, except in the summer when it thaws and becomes swampy. On such a ground the few seeds which would be eventually blown there by the wind from the bordering fir-tree forests have little vitality, and are quickly eaten up by the animals. Thus, the tundra remains treeless. The Soviet administration believes that the tundra could be reclaimed for agriculture. But, when the ground is dug up to a depth of 20-30 cm, one finds an eternal frozen layer (the so-called permafrost) which never thaws. This is the kind of ground in which corpses of prehistoric mammoths are still sometimes found, which is also a sign that the permafrost is many thousand years old. It reaches in the Siberian tundra to a depth of 100-200 meters (on the Taimyr Peninsula even to 500 m). The permafrost is also found as far south as the border of the U.S.S.R., around the Altai Mountains. All the fir-tree forests grow above this permafrost. Its role for the water supply for the vegetation is essential in Siberia where the precipitation is slight. On the other hand, it causes a lot of trouble for the development of the root system of plants, for human constructions, city planners, etc. We shall read more about Russia at our next monthly round.

From July 1959 on, we started to pass through the year which was dedicated to the refugees all over the world. Indeed, the *World Refugee Year* should remind everybody of the turmoil and violence which has been our share since the start of the twentieth century and which resulted in millions of tragedies for individuals as well as for families. In our century, almost 150 million persons have been uprooted one time or another, and have been driven away from their native lands by the ravages of war. After 1945 alone, more than 50 million people became refugees. There are now all categories of refugees, such as Algerians escaping into Tunisia and Morocco, Arabs uprooted by the Palestine Jews, and Jews uprooted by the Moslem countries, Pakistanese escaping from India, Chinese rushing to Hong Kong from the mainland, Tibetans on flight to India, Hungarians scattered after the revolution in all directions of the world, refugees of the Suez crisis, etc. And wherever they may be given an asylum, it is their fate that they remain strangers in lands not of their making, driftwoods carried by Nature's uncontrollable ocean and cast out now on this beach and now on another.

Nowadays, the *craze of hula-hoop* is over; yet, it contributed a special term for our medical dictionaries, the *hula-hoop syndrome*. This includes pain at the side of the neck and pain in the upper abdomen, both aggravated by movement. Especially the degree of rotation of the neck is reduced. There is also some spasm and tenderness in the sternomastoids, the cervical portion of the trapezius, and the paravertebral muscles in the cervical region. An English physician, examining his 65 year-old lady patient, said that, listening to her complaint, he would suspect if she were of a younger generation that she was trying out the hula-hoop. To which the old lady answered: "Indeed, yesterday I was attending the party of young Wilbert, and I took a go at it." . . . Now, with the hula-hoop craze gone, we may also expect that the syndrome will retreat into the pages of medical history. . . . *Multa paucis!*

NOTES

Timely items of general interest are accepted for these columns. Deadline is 1st of month preceding month of issue.

Department of Defense

Ass't Secretary (Health & Medical)—HON.

FRANK B. BERRY, M.D.

Deputy Ass't Sec'y—HON. EDW. H. CUSHING, M.D.

INDUCTIONS

The Department of Defense has called upon the Selective Service System to induct 9,000 men for the Army in November.

AFIP SEEKS OLD INSTRUMENTS

The Armed Forces Institute of Pathology is seeking military medical material to expand the many famous collections of historical items in its Medical Museum.

The Medical Museum is dedicated to the collection, preservation, and display of such material. It is one of the four major departments of the Institute, a national institution jointly sponsored by the Army, the Navy, and the Air Force. More than 300,000 visitors will pass through its halls this year.

The Museum has one of the finest collections of microscopes in the world. These instruments are displayed so as to show the evolution of the microscope from its origin through the most recent developments in electron microscopy. Few microscopes have been added to this collection in recent years, and efforts are now being made to fill the gaps, particularly the years from 1920 to the present.

The Institute will celebrate its hundredth anniversary during and concurrently with the Civil War Centennial. Museum personnel

are now planning the exhibits for this occasion. Through the long history of the Institute a great number of historical instruments have been assembled, but among this material is very little of Confederate Army origin. Such items particularly are being sought.

Although budgetary limitations preclude the purchase of such items it is believed that there are a great number of instruments or other items which the owners might wish to place in the Museum where they will be carefully preserved for future generations. Any such donations would be greatly appreciated and due credit given.

It is requested that persons having items they might wish to contribute write The Director, Armed Forces Institute of Pathology, Washington 25, D.C., relative to their acceptability and shipping instructions.

Army

Surgeon General—LT. GEN. LEONARD D. HEATON

Deputy Surg. Gen.—MAJ. GEN. THOMAS J. HARTFORD

ASSIGNMENTS SGO

Lt. Colonel Ralph R. Arnold, MSC, was recently appointed Chief Pharmacy Consultant, Professional Division, Office of the Surgeon General. He has replaced Lt. Colonel W. L. Austin, MSC, who has been assigned to the 97th General Hospital, Germany.

Lt. Colonel James R. Francis, MSC, has been appointed Chief of the Emergency Planning Branch in the Medical Plans and Operations Division, Office of the Surgeon General.

Lt. Col. Louis H. Foubare, MSC, has been assigned to the Medical Plans and Operations Division, Surgeon General's Office.

Lt. Colonel John M. Hallahan, MSC, re-

cently assumed duties as Chief, Plans and Policies Office, Supply Division, Office of the Surgeon General. He replaced Lt. Colonel Ben F. Peake, MSC, who has been appointed Chief, Supply Operations Branch, Supply Division.

Major Douglas C. Chitwood, MSC, has been assigned to the Special Projects staff in the Personnel and Training Division, Surgeon General's Office.

Major Irwin Lee, MSC, has been appointed Chief of the Purchasing Office, U. S. Army Medical Research and Development Command. He replaces Major R. D. Evans, MSC, who was assigned to the Supply Division, Surgeon General's Office.

Major William J. Meads, MSC, has been assigned to the Medical Plans and Operations Division in the Office of the Surgeon General. He replaces Major Elliotte J. Williams, MSC, who has been assigned to the Office of the Special Assistant for Combat Development.

WRAMC CG PROMOTED

The Commanding General of Walter Reed Army Medical Center, Clement F. St. John, was promoted recently to the temporary rank of major general.

General St. John assumed command of the Center when Lt. General Leonard D. Heaton was made Surgeon General of the Army this year.

PROMOTED TO BRIG. GENERAL

James H. Kidder, MC, USAR, who has served as Special Assistant for Reserve Affairs to the Army Surgeon General since July 1955, was recently promoted to the rank of brigadier general.

He was Professor of Clinical Surgery at New York Medical College and in 1932 was named Dean of the College of Pharmacy, Fordham University. That position he held until 1955 when he became Dean Emeritus. He is one of the few physicians in the country to receive such a title.

In June 1928 after graduation from Cornell Medical College he received his commission in the Reserves and has been in the ac-

tive Reserves since that date. During World War II he served on active duty. After the war he returned to his practice of surgery in New York City.

BAH CO PROMOTED

The Commander of Brooke Army Hospital, Fort Sam Houston, Texas, Robert B. Skinner, was recently promoted to the temporary rank of brigadier general.

General Skinner, a native of Virginia, is a graduate of the Virginia Polytechnic Institute and the University of Virginia Medical School (1930). After his graduation he entered the Army Medical Corps. Prior to his assignment at Brooke Army Medical Center, General Skinner was in command of Martin Army Hospital at Fort Benning, Georgia.

CHIEF, DENTAL SERVICE BAMC

Brig. General Henry R. Sydenham, who has been Chief of the Dental Service of Letterman Army Hospital became Director of Dental Activities at Brooke Army Medical Center on September 1. He succeeded Brig. General Dale B. Ridgely who retired.

COMPTROLLER WRAMC

Lt. Colonel Albert B. Hunt, MSC, recently assumed the position as Comptroller of Walter Reed Army Medical Center. He came to the Center from a tour of duty as Instructor and Chief, Comptroller Subjects Branch of the Army Medical Service School, Fort Sam Houston, Texas. Colonel Hunt who holds an A.B. degree from the University of California (1946), also has a degree in hospital administration from Baylor University (1955).

RETIREMENT BENEFITS FOR NURSES AND MEDICAL SPECIALIST OFFICERS

Public Law 86-197, which was recently signed by the President, will benefit certain Army Nurse Corps and Army Medical Specialist Corps officers not previously eligible for Reserve Retired Pay.

Types of service that will now be credited in the computation of retired pay are:

1. Service in the U. S. Army in temporary wartime appointments prior to 10 July 1944 and after 30 June 1948.

2. Regular or Reserve service in the Army or Navy Nurse Corps as it existed at any time after 2 February 1901 when the Corps were first organized.

3. Active full time duty, except as a student or apprentice, performed with the "Army Medical Department" as a civilian dietitian or physical therapist between 6 April 1917 and 1 April 1943.

4. Active full time duty, except as a student or apprentice, with the "Army Medical Department" as a civilian occupational therapist before appointment in the AMSC or ANC and before 1 January 1949.

Upon relief from Active duty or from Active Reserve status, many ANC and AMSC Reserve officers requested transfer to the Retired Reserve because they could not acquire an eligibility for retired pay prior to reaching age 60.

With the change in law, creating certain service, these Reserve officers in the Retired Reserve may request transfer to an active *Ready Reserve* status provided they can acquire an eligibility for Reserve Retired Pay prior to age 60. DA Airmail Message 18711, dated 14 September 1959, provides the authority for this transfer.

Public Law 86-197 further benefits Regular and Reserve Army officers who were nurses, dietitians, physical or occupational therapists in the Armed Forces before these groups had a commissioned officer status, by providing that all service may be considered as commissioned service.

RETIRED

Brig. General Dale B. Ridgely, DC, who has been Director of Dental Activities at Brooke Army Medical Center since December 8, 1956, retired on August 31 from military service after 33 years. He received the Legion of Merit which was presented by Major General William E. Shambora, commander of the Brooke Army Medical Center. General Ridgely will reside at 442 E. Hathaway Drive, San Antonio, Texas.

MILITARY MEDICINE COURSE

The seventh class of the annual Military Medicine and Allied Sciences Course opened at the Walter Reed Army Institute of Research recently. Twelve Army doctors are attending this nine-months intensive course which has as its director Lt. Colonel William H. Crosby. The officer who has the highest class proficiency will be awarded the Hoff Medal.

These officers who have completed a residency training in a specialty will devote their time to studies in the medical effects of radiation, radioisotopes, nuclear warfare, treatment of mass casualties, chemical and biological warfare agents and certain global epidemiological concepts of particular importance to military professional personnel.

DIETITIANS AND PHYSICAL THERAPISTS GRADUATE

Fifteen second lieutenants in the Army Medical Specialist Corps recently received diplomas at Walter Reed Army Medical Center. They had successfully completed the required one-year training in their specialties in the Army. Previous to acceptance for this training they had university level training.

The dietitians were assigned as follows: Norma J. Bodie, Martin Army Hospital; Florence A. Burgly, Walter Reed Army Hospital; Christine S. Cardwell, Valley Forge Army Hospital; Joan Forester, Womack Army Hospital; Dorothy M. Mount, Ft. Carson Army Hospital; Caroline W. Nizborski, Irwin Army Hospital; Maria J. O'Brien, Ireland Army Hospital; Marian V. Strzelec, Walter Reed Army Hospital; Sarah K. Swift, Walter Reed Army Hospital; Patricia F. Tripp, William Beaumont Army Hospital; Jane L. Welches, Fitzsimons Army Hospital.

The physical therapists were all assigned to Walter Reed Army Hospital: Beverly A. Derrick, Barbara A. Richardson, Martha L. Watkins, and Sarah M. Young.

COMMENDATION RIBBON

Colonel Edward G. Sion, MC, Chief of Professional Division, First Army Medical

Section, Governors Island, New York, was recently awarded the Commendation Ribbon with Metal Pendant for distinguishing himself by meritorious service while Chief, Department of Surgery of the Army and Navy Hospital, Hot Springs, Arkansas. The presentation was made by Lt. General B. M. Bryan, First Army Commanding General.

MOTOR VEHICLE ACCIDENTS

Private motor vehicle accidents are the greatest cause of injury and death to Army personnel. During the calendar year 1958, 3,400 military personnel incurred injury and 436 died as a result of privately owned vehicle accidents. The direct cost of these injuries to the Army approximated \$20,550,000.

Navy

Surgeon General—REAR ADM. BARTHOLOMEW W. HOGAN

Deputy Surgeon General—REAR ADM. EDWARD C. KENNEY

ASSIGNMENTS TO BUMED

Captain Paul R. Engle, MC, has been assigned as Deputy Director, Physical Qualifications and Medical Records Division, Bureau of Medicine and Surgery.

Captain Lloyd B. Shone, MC, was recently appointed Director of the Preventive Medicine Division, Bureau of Medicine and Surgery. This is in addition to his present assignment as Director of the Occupational Medicine and Dispensary Division of the Bureau.

Commander Anthony P. Rush, MC, has been appointed Head, Aviation Medicine Safety and Flight Training Branch, Bureau of Medicine and Surgery. He also holds the position of Head, Aviation Medicine Branch, Aviation Safety Division, Chief Naval Operations.

Lieutenant Matthew L. Greenberg, MC, has been assigned to the Physical Qualifications and Medical Records Division.

Lieutenant Paul N. Jula, MSC, recently reported to the Bureau for duty as Head, Cost Accounting Branch, Comptroller Division.

Lieutenant (junior grade) James I. Myers, MSC, has been assigned to the Hospitalization Branch, Professional Division.

ASSUMES COMMAND NAMC

Rear Admiral J. L. Holland, MC, USN, assumed command of the Naval Aviation Medical Center, Pensacola, Florida, September 24, 1959. When Admiral Holland ordered hoisted his two-starred flag it marked an important first in the long history of this great training base for Naval Aviation. He became the first flag officer of the Navy Medical Corps ever to serve on active duty in Pensacola.

A graduate of Vanderbilt University and a career Naval Medical Officer since 1930, Admiral Holland was Staff Medical Officer for Commander, Air Force, Pacific Fleet prior to assuming his new command. Captain J. V. Land, MC, USN, Acting Center Commander, resumed his post as Commanding Officer, U. S. Naval Hospital. Captain L. C. Newman, MC, USN, commands the Naval School of Aviation Medicine at the Center.

RECENTLY ACTIVATED

Naval Reserve Hospital Corps Division 5-1 was recently activated and established at the National Naval Medical Center, Bethesda, Maryland. This paid drilling unit of the active fleet augmentation components of the Selected Reserve forces conducts training on one week-end each month. The unit has five officers and 50 enlisted hospital corpsmen.

The Commanding Officer of the unit is Commander John W. Walsh, MC, USNR and the Executive Officer is Lieutenant Commander Philip Bayer, USNR.

Interested eligible Naval Reservists may obtain information regarding affiliation with this division by writing to the Commanding Officer, U. S. Naval and Marine Corps Reserve Training Center, Silver Spring, Maryland.

RETIRED

Captain Norman L. Barr, Medical Corps, was placed on the retired list of the Navy

September 1, closing out a 21 year naval career. He is one of the nation's leading authorities on space medicine and had been Director of the Bureau of Medicine and Surgery's Astronautical Division. He was the only officer in Military service entitled to wear five separate Military Aviation Wings: Air Force Pilot, Air Force Observer, Air Force Flight Surgeon, Navy Flight Surgeon and Naval Aviator. Prior to his commission in the Navy he served in the U. S. Army Reserve and the U. S. Army Air Force. Dr. Barr developed a system for gathering physiological information from pilots in the air and from animal and human occupants of earth orbiting vehicles, transmitting it to the ground by radio, relaying it to a central laboratory by radio and telephone from any part of the world, and recording it automatically. The equipment he perfected permits transmission of electrocardiogram, electroencephalogram, body temperature, skin temperature, respiratory rate, respiratory volume and other physiological measures.

Captain Ralph M. Ennes, Dental Corps, U. S. Naval Reserve, retired on September 1, after more than 26 years of service. During World War I he served as a private in the Students Army Training Corps. A graduate of the School of Dentistry Western Reserve University he was commissioned as a Lieutenant (junior grade) in the Dental Corps, U. S. Naval Reserve, in November 1933. He reported for active duty in June 1942, served until October 1945, then returned to private practice. He was recalled in 1951 to active duty. He has taken up residence at 21869 Hilliard Road, Rocky River 16, Ohio, a suburb of Cleveland.

Captain Howard K. Sessions, Medical Corps, who has been Director, Preventive Medicine Division, Bureau of Medicine and Surgery retired on September 1, after completing more than 28 years of active service. He is a graduate of Emory University (1931) and entered the Medical Corps of the Navy after his graduation. From January 1944 until March 1945 he was Senior Medical Officer of the battleship, USS *Texas*

which during that time, participated in the invasion of France and the assault on Iwo Jima.

Other officers of the Navy Medical Corps to be retired recently are: Captains Otto C. Baumgarten, Clement D. Burroughs, DeSales G. DuVigneaud, Albert G. Gibbs, Rexel Goodman, Carroll P. Hungate, Edgar Ricen and Jesse F. Richardson.

ELECTED CHAIRMAN

Lieutenant Commander Solomon C. Pflag, MSC, was elected Chairman of the Military Section, American Pharmaceutical Association at its recent meeting in Cincinnati, Ohio. Command Pflag is on duty in the Bureau of Medicine and Surgery, Department of the Navy, Washington, D.C.

Air Force

Surgeon General—MAJ. GEN. OLIVER K. NIESS

Deputy Surg. Gen.—BRIG. GEN. JOHN K. CULLEN

AEROSPACE MEDICINE COURSE

In addressing the physicians attending the first Advanced Course in Aerospace Medicine for Allied Medical Officers at the USAF School of Aviation Medicine, Brooks Air Force Base, Texas, recently, Major General O. K. Niess, Surgeon General of the Air Force, said that the course would be a continuation of the interchange of medical information between Allied countries and the United States.

He further remarked, "Ever since man has been flying, the progress of the pilot has been paralleled and preceded by the flight surgeon whose continuing task has been to predict the unknowns of human reaction to a hostile environment. . . . The impact of aerospace medicine upon general medical practice has been twofold. First, it is increasing our knowledge about the human body in relation to our natural physical environment on earth. And it is also influencing the development of

medical instrumentation and methods used in diagnosis, observation, and therapy."

VIABILITY SENSOR

The Viability Sensor, or mouse-back transmitter, developed at the U. S. Air Force School of Aviation Medicine for use in space research was recently shown at the 1959 International Trade Fair in Zagreb, Yugoslavia.

This radio transmitter permits the physiological reactions of the mouse to which the transmitter is attached to be recorded by scientists on Earth during the "high flying" of the mouse.

The mouse-transmitter was developed by Robert M. Adams, electronics engineer, and Captain Ray Ware, U. S. Air Force Flight Surgeon. Colonel Harry A. Gorman, Chief of the Veterinary Services at the School of Aviation Medicine, established and carried out the delicate surgical procedures used in affixing the tiny transmitters painlessly to the backskin of mice.

Four mice can be placed in a biopack, or life capsule used on these space flights. With them in the 10-pound capsule is everything necessary to keep them alive and healthy for three full days, including food and water in gelatin form and contained in readily acces-

sible tubes, an oxygen system, and carbon dioxide and water vapor absorption units.

Public Health Service

Surgeon General—LEROY E. BURNEY, M.D.
Deputy Surg. Gen.—JOHN D. PORTERFIELD, M.D.

APPOINTMENT

Dr. Pearce Bailey, Director of the National Institute of Neurological Diseases and Blindness, Bethesda, Maryland, has been appointed Director of the Institute's new International Neurological Research Programs. Appointment was made by Dr. Leroy E. Burney, Surgeon General, U. S. Public Health Service.

In this new position, Dr. Bailey will encourage the international exchange and coordination of scientific knowledge relating to neurologic and sensory disorders. He will serve in a liaison capacity with the World Federation of Neurology, an international professional organization with headquarters in Antwerp, Belgium, and as an advisor to the National Institutes of Health on international neurological developments.

APPOINTMENT TO RADIATION COUNCIL

Dr. Donald R. Chadwick, a career medical officer of the Public Health Service, has been appointed as Secretary of the Federal Radiation Council of which Arthur S. Flemming is Chairman. Dr. Chadwick was chosen because of his special qualifications in the radiological health field.

RETIRED

The following Commissioned Officers of the Public Health Service have been retired: Senior Surgeon Stanton Garfield (grade equivalent to Navy Commander), Dental Surgeon James E. McSweeney (grade equivalent to Navy LCDR), Gilbert R. Tronier (grade equivalent to Navy Lt.).



U. S. Air Force Photo

CAPT. IRVING DAVIS (L.), and TSgt JOSEPH RAWDON test the tiny radio transmitter affixed to the back of a mouse. Enlargement of transmitter shown as insert in photo.

EXAMINATIONS TO BE HELD

COMPETITIVE EXAMINATIONS for appointment of *dentists* and *nurses* as officers in the Regular Corps of the United States Public Health Service Commissioned Corps will be held throughout the United States on March 1, 2, 3, and 4, 1960.

ENTRANCE PAY for Assistant Dental Surgeon with dependents is \$7,345 per year; for Senior Assistant with dependents, \$7,986. For Junior Assistant Nurse Officer without dependents entrance pay is \$4,063; for Assistant Nurse Officer without dependents, \$4,612; for Senior Assistant Nurse Officer without dependents, \$6,065; to this approximately \$200 is added if there are dependents.

PROMOTIONS are made at rapid intervals.

Further information and application forms may be obtained by writing to the Surgeon General, U. S. Public Health Service (P), Washington 25, D.C. Completed application forms must be received in that office no later than January 22, 1960.

NATIONAL LIBRARY OF MEDICINE

The interlibrary loan policy of the National Library of Medicine, Washington, D.C., has been in existence for two years. Through this system individuals can obtain through their local library medical material which might not otherwise be obtainable.

Materials requested through this program are on a loan basis and certification must be made that the material is not available locally. Because of the large number of requests received (6,000 a month) it has been pointed out by NLM that every effort should be made locally to obtain the desired material before a library directs a request to NLM.

Here are the rules for interlibrary loans:

Form of Loans

1. The NLM reserves the right to determine whether material will be loaned in the original form or as photoduplicates.

2. Photoduplicates sent instead of original material will be supplied free of charge to requesting libraries. Such photocopy may be retained permanently by borrowing library.

Method of Borrowing

1. Borrowing libraries will submit their requests in writing, using either the ALA interlibrary loan form or the NLM interlibrary loan form. The latter is supplied free to libraries upon request.

2. Each request must be authenticated, in handwriting, by authorized personnel in the borrowing library. All unsigned requests will be returned.

3. It is expected that under ordinary and usual circumstances librarians will avail themselves of the resources of the local area before directing requests to NLM.

Citations

1. Citations should be complete. Periodical references should contain the name of the journal, date of issue, volume number, author, and title of article. References to books should include full name of author, title, place, publisher, and date.

2. References should be verified before they are submitted to NLM. Incorrect references will not be verified by NLM unless the borrowing library has exhausted its bibliographic resources, in which case a notation to that effect, and summary of sources searched, should be furnished on the form.

3. If a reference cannot be verified by the requesting library the bibliographic citation to its source should be given.

Loan Period

1. The borrowing library may retain original material for a period of four weeks from date of receipt at the library.

2. No renewals of loan of original volumes are granted.

3. Any original volume on loan may be recalled by NLM at any time.

4. Photocopy sent instead of original material may be retained permanently by the borrowing library or disposed of as it wishes.

Reserves

1. Material on loan, in processing, or at the bindery cannot be reserved for libraries.

2. Subsequent requests for material previously reported by NLM as: (a) on loan or in processing—should be submitted at the

end of six weeks; (b) at bindery—should be submitted at the end of ten weeks.

Delivery—All loans will be sent postage prepaid by NLM.

Returns

1. The borrowing library should take the greatest care in packing and transmitting original volumes to NLM. Corners and edges of books should be well protected; unbound material should not be rolled, but should be sent flat. All returns must be adequately insured.

2. The borrowing library will pay postage costs for returning original volumes. This is the only expense to be paid by the requesting library for loan service from NLM.

3. Any convenient method of transportation is acceptable (e.g., library material insured mail).

Special Photographic Services

Special photographic procedures are required to reproduce some items in the collection. NLM will consider requests for copying items of this sort, such as:

1. Portraits, photographs, etchings, and other pictorial works;

2. Text and line drawings;

3. Facsimile reproductions;

4. Long runs of periodicals to complete holdings.

A charge will be made for all such photocopying when the request emanates from outside the Federal Government; cost estimates will be furnished on request.

PHYSICIAN, DENTIST, NURSE RATIO

Health Manpower Source Book, Section 9: Physicians, Dentists, Nurses (PHS Publ. No. 263, Section 9) gives the ratio of physicians, dentists, and nurses to the population and makes certain predictions.

The ratio of physicians to population is at present approximately 133 per 100,000; that for dentists 57 per 100,000.

It is predicted that the ratio for physicians will drop to 126 per 100,000 by 1975; and that the ratio for dentists will drop to 50 per 100,000 by 1975. The ratio for professional nurses is expected to rise from 268 which is

the present figure to 284 per 100,000 by 1970.

The 85 medical schools graduated 6,895 physicians in 1959; the 47 dental schools graduated 3,083 dentists in 1959. There were 30,410 nurses graduated from 1,145 schools in 1958. This number is expected to increase to 37,000 by 1965.

Copies of the report may be obtained from the Superintendent of Documents, Government Printing Office, Wash. D.C., for 50¢.

BIBLIOGRAPHY AVAILABLE

A supplement to the bibliography on Staphylococcal Infection has been issued by the National Library of Medicine. Copies may be obtained at no cost by addressing a request to the Acquisition Division, National Library of Medicine, Washington 25, D.C.

NATIONAL HEALTH SURVEY BOOKLET

Limitation of Activity and Mobility Due to Chronic Conditions, U.S., July 1957-June 1958 (PHS Publ. No. 584-B 11) brings out some astounding facts regarding the limitation of activity of the people of the United States who are afflicted with chronic conditions.

It is estimated that 17 million people, ten percent of the population, are limited in their ability to work, keep house, or pursue outside activities. A segment of this 17 million, about three percent, have trouble moving about or cannot move about without help. Of this three percent, about one million persons are completely confined to their homes.

Copies of this booklet are available from the Superintendent of Documents, Government Printing Office, Washington, D.C. at 30¢ each (cash or money order—no stamps).

Veterans Administration

Chief Medical Director—WILLIAM S. MIDLETON, M.D.

Deputy Chief Med. Dir.—R. A. WOLFORD, M.D.

LEAVES VA

Dr. Martin M. Cummings, who has been director of medical research for the Veterans

Administration since 1953 has left to become chairman of the department of microbiology at the University of Oklahoma School of Medicine.

He will continue to be affiliated with the Veterans Administration as a consultant to the VA Oklahoma City hospital where he will also do research on sarcoidosis.

PHARMACY RESIDENCIES

Graduate registered pharmacists are eligible for residencies in hospital pharmacy in the Veterans Administration hospitals at Seattle, Wash., and Minneapolis, Minn.

The pharmacy residency is a 22-month program in which the student spends 28 hours per week at the VA hospital during which time he works toward his master's degree at a cooperating university. They are paid while working at the hospital.

The programs at Seattle and Minneapolis have been developed in cooperation with the graduate schools of the Universities of Washington and Minnesota.

Applicants for these residencies should apply to the VA hospital conducting the training.

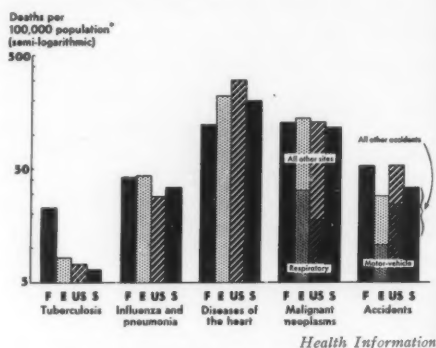
Miscellaneous

BLOOD PRESSURE MONITOR

A continuous blood pressure monitor has been developed by Dr. J. H. Green, Department of Physiology, Middlesex Hospital Medical School, London. This has particular value in surgical operations where it is necessary to know the blood pressure readings of the patient at all times.

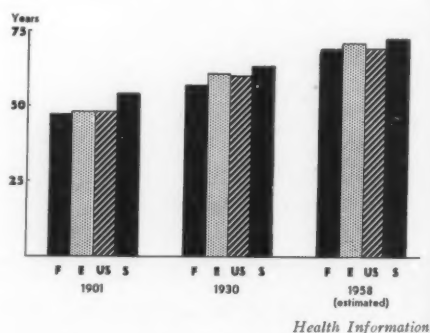
Instead of an arm cuff a small digital cuff combining a crystal microphone is fitted over the patient's finger. It is said that this device causes no discomfort and the information about the blood pressure can be relayed automatically to a remote point if necessary. Any abnormal change in pressure immediately alerts the alarm system of the equipment, and bells or lights will give warning at the control point.

MORTALITY FROM FIVE MAJOR CAUSES IN SELECTED COUNTRIES



Statistics from 1957, France, England, U. S. and Sweden

EXPECTATIONS OF LIFE AT BIRTH



France, England, U. S., and Sweden

REPORT AVAILABLE

Biological and Environmental Effects of Nuclear War, the expert testimony report on the biological and environmental effects of nuclear war, is available from the Joint Committee on Atomic Energy, U. S. Capitol, Washington, D.C.

MEETING

The Pan American Medical Association will hold a meeting in Mexico City, May 2 to 11, 1960. Through its 48 different sections, the scientific program of the Association will include all branches of medicine and surgery.

Further information may be obtained by writing to the Association, 745 Fifth Ave., New York 22, N.Y.

REPORTS AVAILABLE

Short-Term Human Feeding Studies of Foods Sterilized by Gamma Radiation and Stored at Room Temperature (PB 151152); 28 pp., price 75¢.

The Use of Additives in Eliminating the Undesirable Effects of Ionizing Radiations (PB 131954); 48 pp., price \$1.25.

Destruction of Microorganisms in Water, Sewage, and Sewage Sludge of Ionizing Radiation (PB 151148); 38 pp., price \$1.00.

Liquid Diets for Use in High-Altitude, High-Performance Vehicles (PB 151786); 25 pp., price 75¢.

Foil Pack Meal Guide (PB 151792); 52 pp., \$1.50.

Above may be obtained from Office of Technical Services, U. S. Department of Commerce, Washington 25, D.C.

WASTE A SECOND

A car traveling 60 miles per hour covers 88 feet per second. This means that two cars approaching each other at 60 miles an hour close a 500-foot passing clearance in less than 3 seconds. Knowing this fact, ask yourself this question before you pull out to pass that next car: *Can I pass in time?* If there is a doubt in your mind, stay in line. You may waste a second but save a life.—

Radio-TV Spot Announcement suggested by the Oregon Department of Motor Vehicles.

WORRY

If you must worry, don't worry out loud. It wastes the time of others as well as your own.

ARNOLD H. GLASOW

CREDIT

Most people today wouldn't have such fat wallets if they removed the credit cards.

Weekend Mag. Chicago Daily News

FAMILY

American families are continuing to grow in number and size. There were about 38 million husband and wife families in the U.S. in March 1958, a gain of 5,750,000, or 18%, in the past decade. In the same period the number of families with three children under age 18 increased 68%, and those with four or more dependent children increased by 59%.

Metropolitan Life Ins. Co., Statistical Report

RETIREMENT

Those who retire without some occupation spend their time talking about their ills and their pills.

HERBERT HOOVER, celebrating his 85th birthday

New Members

LCdr. Helen Louise Boyle, NC, USN
 Capt. Carolyn Wolf Davis, USAFR, NC
 1st Lt. Anna Koneck, ANC, USAR
 Capt. Swan S. Ward, USAFR, MC
 S A Dent. Surg. Rex A. Warnick, USPHS
 Capt. A. R. Cimino, USAFR, DC
 Maj. William M. Yanosy, USAFR, DC
 Capt. Ardis C. Harper, Jr., MSC, USA
 Lt. Col. Judson L. Taylor, USAFR, DC
 Maj. Gen. William S. H. Chow, Chinese Army
 Col. Arnold L. Ahnfeldt, MC, USA
 Lt. Col. James I. Kendall, USAFR, MSC
 1st Lt. Ruper E. Stivers, MSC, USA
 Capt. Joseph W. Cush, USAFR, MC
 Med. Dir. Eugene W. Veverka, USPHS
 Lt. Col. Harvey L. Lloyd, USAFR, MC
 Lt. Col. Sidney E. Wanderman, MC, USAFR
 Lt. Ezequiel Trejo Padilla, MC, Venezuelan Army
 1st Lt. Daniel R. Young, USAFR, DC
 Capt. Frank H. Zahrt, MC, Mo. AFANG
 1st Lt. George W. Young, USAFR, MSC
 Maj. Barnett Zumoff, USAFR, MC
 Capt. Anita L. Hayne, NC, USAR

Capt. Murry William Wade, Jr., USAFR, MSC

Cdr. Ralph K. Longaker, USPHS

NO Katherine B. Holland, USPHS

Sr. Dent. Surg. Bill J. Brady, USPHS

Capt. Ellis V. Grabau, MSC, USAF-R

Leonard Stutman, M.D.

Capt. Robert L. Reid, MC, USA

Maj. William L. Strong, DC, USAF

S A Surg. Dino A Belletti, USPHS

Vaso L. Purlia, M.D.

Lt. Col. Margaret Harper, ANC, USA

Capt. Edward J. Shelton, USAF-R (MC)

George E. Ehrlich, M.D.

2nd Lt. Thomas E. Tate, MSC, USAF

Capt. Theodore G. Winiecki, DC, USA

Cdr. Radford I. Ross, USPHS

Bernard T. Koon, M.D.

Capt. Walter W. Seibly, USAF-R (MC)

Dr. Lester J. Schultz

Major Stella G. Duc, ANC, USA

Surg. Herman Katter, USPHS-R

Capt. Josephine Stankevich, USAF-R (NC)

Capt. Gordon H. Turner, Jr., USAF-R (MC)

Capt. Alfred F. Obery, DC, USA

Capt. John F. Robinson, Jr., USAF-R (DC)

Capt. Marvin M. Fand, DC, USA

Charles J. Bove, Jr., M.D.

Lt. Herbert G. Hopwood, Jr., MC, USN

Sr. Surg. Betsy B. MacCracken, USPHS-R

Dr. Robert B. Ward

Lt. Col. Ralph G. LeMoon, MSC, USA

Frederick Volini, M.D.

served until April 28, 1911 when the Army Dental Corps was formed, at which time he accepted a commission as a first lieutenant of the Dental Corps.

He was assigned to duty in the Philippines from 1902 to 1906, where he saw action against the Moro tribes in the final campaigns of the Philippine Insurrection. During the Mexican Border Campaign he provided dental coverage for the posts from Marfa, Texas to Ft. Apache, Arizona. He was a member of the first contingent of Army Dental Surgeons to depart for France, with the A.E.F., sailing in July 1917. "For exceptionally meritorious and conspicuous service" he was cited by General Pershing and was awarded the Purple Heart.

He is survived by his widow who resides at 3228 Cleveland Avenue, N.W., Washington, D.C.

Interment was in Arlington National Cemetery.

SITTER, Stephen C., Colonel, Medical Corps, U. S. Army, Retired, died at Napa, California, September 12, at the age of 53.

Dr. Sitter was a native of Wisconsin and received his M.D. degree from Marquette University in 1933. In 1934 he was commissioned in the Medical Corps of the Army. He specialized in psychiatry and had a year's graduate work at St. Elizabeths Hospital, Washington, D.C. In 1941 he was assigned to Sternberg General Hospital in the Philippines and at the time of the Japanese invasion was on duty there. He was taken prisoner by the Japanese. After liberation he was assigned to the Vaughn General Hospital in Chicago. When that hospital was closed he was assigned to the Office of the Surgeon General of the Army where he was Assistant Chief of the Neuropsychiatric Division. Later he was assigned to Letterman Army Hospital in San Francisco and was there as Chief of Neurology until January 1952 when he was retired from active military duty. At the time of his death he was Chief of the Neurology Service, Veterans Hospital, Yantville, California.

He is survived by his wife and three sons.

Deaths

RHOADES, Rex H., Colonel, Dental Corps, U. S. Army, Retired, died at Walter Reed Army Hospital on September 11 at the age of 83.

Dr. Rhoades was a native of Oakland, Iowa. He received his Doctor of Dental Surgery degree from the University of California in 1902, and joined the military service as a Contract Dental Surgeon in November of that year. In that capacity he

AWARDS

Presented at Honors Night Dinner, 66th Annual Convention,
Mayflower Hotel, Washington, D.C., November 11, 1959

THE SIR HENRY WELLCOME MEDAL AND PRIZE

The Sir Henry Wellcome Medal and Prize is awarded annually through the Association of Military Surgeons of the United States by the Trustees of the Wellcome Foundation in London for the best essay on a military medical subject. The award consists of a Silver Medal, a scroll, and an honorarium of \$500. The winner of the 1959 award is Lieutenant Colonel Samuel Hurewitz, Medical Corps, U. S. Army, Commanding Officer, 7th Evacuation Hospital, Darmstadt, Germany. The title of his winning essay is: "Military Medical Problems of the Lebanon Crisis." This essay will be published in the January 1960 issue of MILITARY MEDICINE.

Lt. Colonel Hurewitz is a native of Boston, Massachusetts. He received his medical

degree from the Middlesex University School of Medicine in 1933. He served with the Civilian Conservation Corps, and was commissioned in the Army in 1942. During World War II he served in the European Theater and saw action in five campaigns. He was awarded the Purple Heart and the Bronze Star Medal. After leaving the military service in 1946 he joined the Veterans Administration. The Korean Conflict brought him back to active military duty in 1950 and service in Korea where he saw action in three Korean campaigns. He was awarded the Oak Leaf Cluster to his Bronze Star Medal for his efforts in the control of Hemorrhagic Fever. He became the Division Surgeon of the 82nd Airborne Division. He graduated from the Basic Airborne School in August 1955 and was awarded Senior Wings in June 1956. From May 1958 to May 1959 he was Division Surgeon of the 24th Infantry Division in Germany, and then was assigned to his present position.

THE GORGAS MEDAL

The Gorgas Medal is awarded for distinguished work in preventive medicine for our Armed Forces. The award was established by Wyeth Laboratories of Philadelphia in memory of Major General William Crawford Gorgas whose work in preventive medicine made possible the construction of the Panama Canal. This award consists of a Silver Medal, a scroll, and an honorarium of \$500.

The winner of the 1959 Gorgas Medal is Colonel Albert J. Glass, Medical Corps, U.S. Army, Chief Psychiatry and Neurology Consultant, Office of the Surgeon General, U. S. Army. The award was given for distinguished service in the field of preventive psychiatry.



Muller, Darmstadt

LT. COL. SAMUEL HUREWITZ, MC, USA



U. S. Army Photo

COL. ALBERT J. GLASS, MC, USA

As the first Chief Neuropsychiatric Consultant to the Far East Command during the Korean Conflict, Colonel Glass called upon his knowledge and experience accumulated during World War II and rapidly established an effective preventive psychiatric treatment program. His continuing emphasis on prevention of psychiatric casualties has resulted in an all-time low of psychiatric disorders in the U. S. Army and a marked reduction in the number of military offenders confined to disciplinary barracks and the better understanding of the maladjusted and emotionally disturbed soldier. He has contributed significantly to the study of emotional reactions in disasters and through lectures and articles he is enlarging our knowledge in preventive psychiatry.

Colonel Glass is a native of Baltimore, Maryland, and received his medical degree from the University of Maryland in 1932. After an internship he specialized in neuropsychiatry. He entered military service in June 1941. In April 1943 he went to North Africa and after serving in various station hospitals became division psychiatrist of the 85th Infantry Division in Italy. He served

in the European Theater until 1946, then returned for duty to the United States where he served in several general hospitals of the Army until ordered to Korea shortly after the outbreak of hostilities there. Later he returned to the United States and has been on several tours of duty with the general hospitals of the Army.

Colonel Glass is certified in psychiatry and neurology and is a fellow of the American Psychiatric Association.

THE MAJOR LOUIS LIVINGSTON SEAMAN PRIZE

The Major Louis Livingston Seaman Prize is made possible through funds left for that purpose with the Association of Military Surgeons of the United States by Major Louis Livingston Seaman, Surgeon of the First U. S. Volunteers, Spanish-American War. The prize is given for some notable article published in *MILITARY MEDICINE* during the year, and consists of a scroll and an honorarium of \$160.

The winner of the 1959 prize is Roberts



ROBERTS RUGH, Ph.D.

Rugh, Ph.D., Associate Professor of Radiology, Radiological Research Laboratories, Columbia University, New York City. His article entitled "Ionizing Radiations—Their Possible Relation to the Etiology of Some Congenital Anomalies and Human Disorders" was published in the June 1959 issue of *MILITARY MEDICINE*, Volume 124, Number 6.

Dr. Rugh is a native of Springfield, Ohio, a graduate of Oberlin University, and received his Ph.D., from Columbia University. He is author of a number of books and articles in the field of biology. He is listed in *American Men of Science* and *Who's Who in America*.

THE STITT AWARD

This award is given to a member of one of the Federal Medical Services who has done some outstanding work in the field of antibiotics. The award was established in 1954 through the courtesy of Pfizer Laboratories, Division of Charles Pfizer and Company, Inc., Brooklyn, New York, and consists of life membership in the Association of Military Surgeons of the United States, a bronze plaque, and an honorarium of \$500.

The winner of the 1959 award is Joseph

E. Smadel, M.D., Associate Director, National Institutions of Health, Bethesda, Maryland.

Dr. Smadel is a native of Vincennes, Indiana, a graduate of the University of Pennsylvania, and received his medical degree from Washington University School of Medicine (1931). He has received an M.S. (Honorary) degree from Yale University, and a D.Sc. (Honorary) degree from Jefferson Medical College. At the time of his termination of active duty with the Army in 1946 he held the rank of lieutenant colonel in the Medical Corps. From 1934-1942 he was associated with the Rockefeller Institute for Medical Research. His accomplishments in the fields of virology and immunology are numerous. He is one of the prominent virologists of the country, and has written extensively on subjects pertaining to that field.

THE MCLESTER AWARD

This award was established in 1954 by the J. B. Roerig Company Division, Charles Pfizer and Company, Inc., Brooklyn, New York, to honor the memory of Colonel James Somerville McLester, MC, USAR, Birmingham, Alabama. The award is presented to a person who is, or has been, at any time a commissioned officer, or has held relative status in the Federal Medical Services, and who has done some outstanding work in the field of Nutrition and Dietetics. The award consists of a bronze plaque and an honorarium of \$500.

The winner of the 1959 award is Robert Van Reen, Ph.D., Biochemist and Associate Head, Dental Division, Naval Medical Research Institute, National Naval Medical Center, Bethesda, Maryland.

Dr. Van Reen received his Ph.D. degree from Rutgers University in 1949. During World War II he served in the U. S. Army Air Corps. In his present position at the Naval Medical Research Institute he has been responsible for nutritional and biochemical research in studies on the use of preserved tissues in surgery, long term studies concerning the fate of anorganic



National Institutions of Health

JOSEPH E. SMADEL, M.D.



ROBERT VAN REEN, PH.D.

bone grafts, epidemiology, etiology and treatment of dental caries, dietary elements influencing dental caries in laboratory animals, the qualitative and quantitative evaluation of the components in the normal and abnormal tooth and bone, and metabolic activity of the salivary glands.

He is author or co-author of many papers in the field of biochemistry and nutrition.

THE FOUNDERS MEDAL

The Founders Medal is awarded by the Executive Council of the Association of Military Surgeons of the United States to members of the Association for meritorious service in the field of military medicine and for some notable work done for the Association.

The recipients of this medal and the scroll which accompanies the medal are:

Vice Admiral Thomas F. Cooper, Medical Corps, U. S. Navy, Retired, who served in many important positions during his Navy career, the most recent of which was Commanding Officer of the National Naval Medical Center, Bethesda, Maryland, a position filled by him at the time of his retirement.

Colonel Aubrey L. Jennings, U. S. Air



Official U. S. Navy Photo

VICE ADM. THOMAS F. COOPER, MC, USN, RET.

Force, Medical Corps, Director, Directorate of Professional Services, Office of the Surgeon General, U. S. Air Force, Washington, D.C. He is General Chairman of the 66th Annual Convention of our Association.

Colonel Frank M. Townsend, U. S. Air Force, Medical Corps, Director of the Armed Forces Institute of Pathology, Washington,



U. S. Air Force Photo

COL. AUBREY L. JENNINGS, USAF, MC.



U. S. Air Force Photo

COL. FRANK M. TOWNSEND, USAF, MC.

D.C. He is Chairman of the Scientific Program Committee of the 66th Annual Convention of our Association.

THE SUSTAINING MEMBERSHIP AWARD

This award established in 1958 is made possible by the Sustaining Members of the Association of Military Surgeons. It was established by the Executive Council of the Association at the suggestion of those members, and is to be given to any person in the Federal Medical Services who has made some outstanding contribution in the field of research. The award consists of a scroll and an honorarium of \$500.

The 1959 award will be given to Colonel George M. Knauf, U. S. Air Force Medical Corps, Staff Surgeon, Air Force Missile Test Center, Patrick Air Force Base, Florida, in recognition of his outstanding contributions in the field of Occupational Health. Through his foresight and knowledge he was able to visualize the dangers of large amounts of energy in the microwave spectrum of radio frequencies and make necessary recommendations for the protection of personnel involved in the operation of microwave equipment.



U. S. Air Force Photo

COL. GEORGE M. KNAUF, USAF, MC.

Colonel Knauf is a graduate of Hahnemann Medical College. During World War II he served in the Pacific Theater and wears nine battle stars on his Asiatic Pacific Campaign medal. He is Consultant to the Surgeon General of the U. S. Air Force in the field of biological effects of microwave energy.

ANDREW CRAIGIE AWARD

The Andrew Craigie Award was established in 1959 by the Lederle Laboratories, Division American Cyanamid Company, Pearl River, New York. This award honors the memory of Andrew Craigie, first Apothecary General of the military forces of our country, who served under General George Washington during the Revolutionary War. The award, a beautiful silver plaque, is made for outstanding accomplishment in the advancement of professional pharmacy in the Federal Government.

The first award has been made to Vernon O. Trygstad, Director, Pharmacy Service, Department of Medicine and Surgery, Veterans Administration, Washington, D.C.

Mr. Trygstad received his B.S. degree in Pharmacy from North Dakota State College

*Vet. Adm. Photo*

VERNON O TRYGSTAD, B.S.

in 1936. During World War II he served with the U. S. Navy. Upon his discharge from the naval service he joined the Veterans Administration and has been its Director of Pharmacy since 1954. He has developed an outstanding training program for pharmacists in the Veterans Administration and has had an active part in the coordination of its training program with universities and colleges. His services have been recognized in his recent election to President of the American Society of Hospital Pharmacists for the coming year.

THE WILLIAM C. PORTER LECTURE

The WILLIAM C. PORTER LECTURE which is sponsored by the Smith Kline and French Laboratories of Philadelphia to honor a pioneer in military psychiatry was established in 1958. The second lecture was given during the convention this year by Paul H. Hoch, M.D., Commissioner, Department of Mental Hygiene, State of New York. His subject was "Trends in Mental Health."

William C. Porter was a graduate of the Albany Medical College of Albany, New York (1907), and served as a psychiatrist with the New York State Hospital Service until 1918 when he was commissioned in the Army Medical Corps. He served as a psychiatrist in the Army until his retirement in 1947 when he became Superintendent of the Los Lunas Hospital and Training School, Los Lunas, New Mexico. He was in that position when he died September 24, 1955.

THE SUSTAINING MEMBERSHIP LECTURE

The SUSTAINING MEMBERSHIP LECTURE which is delivered annually during the convention of our Association was established by the Sustaining Members in 1958. The lecturer for the 66th Annual Convention was Austin Smith, M.D., President, Pharmaceutical Manufacturers Association.



NEW BOOKS

Books May Be Ordered Through The Association

- Essentials of Military Training*, The Stackpole Co., Harrisburg, Pa. Price \$6.50.
- The Life and Times of Sir Charles Hastings*, William H. McMenemey, M.A., D.M., F.R.C.P., D.P.M., The Williams & Wilkins Co., Baltimore, Md. Price \$10.00.
- Open Reduction of Common Fractures*, Oscar P. Hampton, Jr., M.D., F.A.C.S. and William T. Fitts, Jr., M.D., F.A.C.S., Grune & Stratton, New York, N.Y. Price \$8.75.
- Space Technology*, Edited by Howard S. Seifert, John Wiley and Sons, Inc., New York, N.Y. Price \$22.50.
- Command Decisions*, Office of the Chief of Military History, Department of the Army, Kent Roberts Greenfield, General Editor, Harcourt, Brace and Company, New York, N.Y. Price \$5.95.
- Roentgens, rads, and Riddles*, a Symposium on Supervoltage Radiation Therapy, held at the Medical Division, Oak Ridge Institute of Nuclear Studies, July 15, 16, 17, and 18, 1956, edited by Milton Friedman, M.D., Marshall Brucer, M.D., and Elizabeth B. Anderson, United States Atomic Energy Commission. Superintendent of Documents, Government Printing Office, Washington 25, D.C. Price \$3.50. (Paperbound)
- Microbial Variation*, V. D. Timakov, USSR Translated by G. H. Beale. Pergamon Press, Inc., New York, N.Y. Price \$6.50.
- History of the American Dietetic Association 1917-1959*, edited by Mary I. Barber, J. B. Lippincott Co., Philadelphia, Pa. Price \$6.00.
- Naval Customs, Traditions, and Usage*. 4th Ed., Vice Admiral Leland P. Lovette, USN (Ret.), U. S. Naval Institute, Annapolis, Md. Price \$5.50.
- Experimental Surgery including Surgical Physiology*. 4th Ed. J. Markowitz M.B.D., J. Archibald, D.V.M., and H. G. Downie, D.V.M. The Williams & Wilkins Co., Baltimore, Md. Price \$12.50.
- Essential Principles of Pathology*, John W. Landells, M.A., M.B., M.R.C.P., F.Z.S., J. B. Lippincott Co., Philadelphia, Pa. Price \$5.00.
- Medical Management of the Menopause*. A Monograph, Minnie B. Goldberg, M.D., Grune & Stratton, New York, N.Y. Price \$4.50.
- Psychoanalysis of Today*, Dr. S. Nacht, University of France, Translated by Ruth Emma Roman, Grune & Stratton, New York, N.Y. Price \$5.75.
- Mental Retardation*, Its Care, Treatment and Physiological Base, Hans Mautner, M.D., Pergamon Press, New York, N.Y. Price \$5.50.
- Clinical Disorders of Hydration and Acid-Base Equilibrium*, Louis G. Welt, M.D., Little, Brown & Co., Boston, Mass. Price \$7.00.
- Clinical Auscultation of the Heart*, 2nd Ed., Samuel A. Levine, M.D., Sc. D. (Hon.), F.A.C.P., and W. Proctor Harvey, M.D., W. B. Saunders Co., Philadelphia, Pa. Price \$11.00.
- The Surgical Treatment of Facial Injuries*, Varaztad Hovhannes Kazanjian, C.M.G., D.M.D., M.D., F.A.C.S., D.Sc. (hon) and John Marquis Converse, M.D., F.A.C.S., The Williams & Wilkins Co., Baltimore, Md. Price \$22.00.



BOOK REVIEWS

ATOMIC MEDICINE. 3rd Ed. Edited by Charles F. Behrens, M.D., F.A.C.R., with the collaboration of 24 contributing authorities. 705 pages, illustrated. The Williams and Wilkins Co., Baltimore. Price \$15.00.

Atomic Medicine is concerned with such widely separated yet related subjects as radiobiology, the effects of atomic weapons, survival methods in atomic disaster, radiation hazards from industrial applications of atomic energy, uses of radioisotopes in medical research and in the diagnosis and treatment of disease, and a carefully delineated modicum of basic physics without which the reader's understanding would be unnecessarily handicapped.

This excellent book, in its extensively revised third edition—ten years after the first and six years after the second—is an authoritative, up-to-date and readable compendium of the more important segments of our knowledge in this complex field. It is balanced and effectively illustrated. It demands and deserves the attention of wide-awake physicians everywhere.

W. EDWARD CHAMBERLAIN, M.D.

PROBLEMS OF ADDICTION AND HABITUATION. Edited by Paul H. Hoch, M.D., New York State Psychiatric Institute; and Joseph Zubin, Ph.D., Dep't., of Psychology, Columbia University. 250 pages. Grune and Stratton, New York and London. Price \$6.50.

This volume contains the proceedings of the 47th annual meeting of the American Psychopathological Association in New York City, in February, 1957. This symposium was organized to permit representatives of problems presented by alcoholism and drug addiction to present their different approaches with the hope that research might be stimulated to develop better therapeutic methods.

As might be expected the various authors disagree in their approach, their definition of terms, their methods of conducting investigations on man or animals and in the conclusions drawn from their own data. The Presidential address by Liddell indicates that appetite and good cheer are a significant portion of the biological basis for psychopathology. Karl Bowman presented an address on some problems of addiction to tobacco, alcohol, opium, barbiturates, marijuana, mescal, and the new tranquilizing drugs; reviews the history of handling narcotic addicts in the United States and suggests consideration of the so-called "British System" of treatment of drug addicts. This is contradicted by Lee Speer in his documentation of the narcotic addiction problem in the United States, which

stresses the development of narcotic control by the Bureau of Narcotics.

Other papers indicate the lack of complete knowledge regarding personality characteristics tending to lead to alcoholic or narcotic addiction; various methods of treating chronic alcoholism and their limitations.

The discussions reveal lack of definite knowledge and need for further research in the whole area.

JAMES C. MUNCH

TEXTBOOK OF NEUROLOGY. 2nd Ed. Revised. By H. Houston Merritt, M.D., Professor of Neurology, Columbia University. 765 pp., 182 illustrations and 123 tables. Lea & Febiger, Philadelphia. Price \$12.50.

Without losing original appeal and excellence of presentation, Dr. Merritt has successfully revised his American textbook of neurology. He made elaborations, condensations and minor rearrangements, as well as adding entities such as galactosemia, maple syrup disease and the ECHO viruses. Recent references, when pertinent, have been inserted. This "bringing-up-to-date" has been accomplished with no material lengthening or increase in size of the book.

The author has a certain prescience about neurological questions. Avoiding obscure erudition, he anticipates and answers in a concise manner, as illustrated in his consideration of amyotrophic lateral sclerosis, both with regard to treatment and indication for myelography—when the diagnosis is in doubt. The volume is compact and very readable. It is highly recommended as a handy source of neurological knowledge for general practitioners, internists, and neurology residents. Experienced neurologists may take pleasure in reading this book for review purposes. This would also be appropriate for those individuals who desire to completely read a neurology text prior to taking board examinations in neurology or psychiatry.

LT. COLONEL ARTHUR J. LEVENS, MC, USA

THE ARMY AIR FORCES IN WORLD WAR II. Vol. VII. Edited by W. F. Craven and J. L. Cate. University of Chicago Press, Chicago. Price \$8.50.

This seventh and final volume dealing with the history of the Army Air Forces in World War II documents world-wide supporting services contributing to the winning of the aerial phase of that conflict. Of particular interest in Chapter 13, "The Medical Service of the AAF," written by Dr.

George V. LeRoy. In just 65 interesting pages, the author summarizes the detailed and official medical history of the AAF (*Medical Support of the Army Air Forces in World War II*, by Mae Mills Link and Hubert A. Coleman, OTSG, USAF, Washington, D. C., 1954) in a concise yet comprehensive manner. The development of the science and art of aviation medicine is well presented, as are the many controversies which accompanied the evolution of an autonomous air medical service. Specific administrative and operational medical problems peculiar to the air arm are related, as are important contributions of aviation medicine to the over-all broad field of military medicine.

In the development of the cause of aviation medicine, certain unfavorable references are made to conventional Army medical service; however, these seem justified and presented with a minimum of prejudice. In fact, the skillful treatment of these controversial areas makes this essay stimulating and enlightening reading for any practitioner of military medicine, not merely those engaged in aviation medicine. The major principles developed are: "(1) in an air weapons system, the human factor is equal in importance to the plane; (2) the chief medical officer of the system must be directly responsible to the chief executive, and this relationship should extend to every echelon of command; and (3) a major combat force must control its own medical service." These truths seem applicable to any military system.

LT. COL. SPURGEON NEEL, MC, USA

DISEASES OF THE COLON AND ANORECTUM. Two Volumes. Edited by Robert Turell, M.D., New York. 82 contributors. Vol. I-608 pp; Vol. II-630 pp. Illustrated. W. B. Saunders Company, Philadelphia and London. Price \$35.00 per set.

Eighty authors have written the 60 chapters of this two-volume work on the function and the diseases of the colon and the anorectum; in 13 of these chapters Robert Turell has submitted the essence of his own broad experience in this field.

The work is divided into six main parts: basic science, diagnosis, anesthesia, colorectal lesions, anorectal lesions, and special considerations. Under these general headings every possible aspect of the subject matter and the therapy is fully covered in an unusually clear and concise way. There are 634 excellent illustrations, charts, diagrams, roentgenograms, micrographs and many tables to enhance the instructiveness of the text. A list of references is appended to every chapter, and complete author and subject indices conclude each volume.

A number of diagnostic and therapeutic instruments, devised or improved by the editor, are pictured and discussed by him to great advantage. This work has no highlights! A wealth of knowledge and information is accumulated in its pages, offering everybody concerned a unique opportunity to add to or refresh his learning. Consideration is

given to the rare and the common issue alike, be it with a treatise on retrorectal tumors or by emphasizing the hazards, deleterious effects and/or uselessness of laxatives, enemas, medicated rectal suppositories and cholinergic and anticholinergic drugs, still widely used in the investigation and treatment of minor and major anorectocolonic diseases.

While the book is directed primarily to the general surgeon who performs anorectocolonic surgery and to the proctologic surgeon with a general surgical background, generous attention is also paid to the diagnostic and therapeutic needs of the gastroenterologist, internist, pediatrician, and the general practitioner. Particular benefit should be derived from it by interns and surgical residents in training.

The editor, the contributors and the publisher fully deserve praise and congratulations for a most difficult project planned and completed in exemplary fashion.

Anyone ever having to deal with diseases of the colon and anorectum should avail himself of this magnificent work which represents indeed a most important and significant contribution of outstanding value to the present-day literature on the subject. Its addition to every hospital library should be mandatory.

ERNEST G. ABRAHAM, M.D.

A PRIMER OF WATER, ELECTROLYTE AND ACID-BASE SYNDROMES. By Emanuel Goldberger, M.D., F.A.C.P. 322 pp. Lea & Febiger, Philadelphia. Price \$6.00.

The author considers the subject of acid-base disturbances in a state of confusion due to chemical terminology, mechanical formulas, and lack of clinical understanding. He, therefore, attempts to simplify the situation of electrolyte disturbances, acid-base and water requirements by using simple terms and relating the chemical determinations to the patient in a practical formula that a patient can tolerate.

This book is divided into five parts. The subjects covered deal with the extracellular water, syndromes associated with or due to water disturbances, sodium disturbances and disturbances in acid-base balance. The final part deals with fluid therapy.

The book is well written and fulfills the author's goal of simplifying the understanding of this difficult subject. It is recommended for those who wish a rapid review or for use as a reference to problems in this field.

COL. D. O. LYNN, MC, USA

CARE OF THE PATIENT WITH A STROKE. By Genevieve Waples Smith, R.N., M.A. 148 pp., illustrated. Springer Publishing Company, Inc., New York. Price \$2.75.

This interesting and very practical handbook for family use to help in the case of patients with strokes was written by a nurse whose husband suf-

ferred a severe stroke. She has included excellent discussions about the problems faced when patients go home from hospital; about increasing patients' physical activities; their friends and visiting; the many personality problems which are bound to develop; and a timely chapter on learning to talk if the patient has become aphasic. Extremely helpful are the many practical suggestions relative to daily care, food, nursing, physical therapy and rehabilitation. Although written especially for the families of stroke patients, this handbook should prove very helpful to all who deal with stroke patients, including physicians and nurses.

COL. H. P. MARVIN, USA, RET.

CLINICAL ORTHOPAEDICS. No. 13. *The Hand*. Editor-in-Chief, Anthony F. DePalma. 393 pp., illustrated. J. B. Lippincott Company, Philadelphia and Montreal. Price \$7.50.

This new volume in a growing series of orthopaedic topics devotes nearly two-thirds of its pages to *The Hand*. Quite properly homage is paid to the master of this field, the late Dr. Sterling Bunnell. Following this are seventeen papers by contemporary authorities on hand surgery. Volume thirteen is no exception to the reviewer's feeling that these volumes serve a distinct purpose in bridging the gap between the encyclopaedic text and the most recent articles found in current journals, particularly in making emphasis on clinical material.

Section I—*The Hand*—has been carefully edited, and one would predict that if the subsequent issue to be published in the Fall of 1959 follows the pattern, a nucleus of a short authoritative monograph on surgery of the hand will have been presented. All the articles on *The Hand* are good, and particularly good were those on Anatomy, Injuries, and Treatment of the Extensor Apparatus of the Hand and Digit and Acute Open Flexor Tendon Injuries of the Hand.

Sections II and III on General Orthopaedics and Items consist of ten and seven papers, respectively. Dr. Deyere wrote a well-illustrated article on Absolute Fixation with Contact Compression in Hip Fractures. Not all readers, I am sure, will agree with the use of his fixation device, but he has presented his arguments well, and it will be interesting to see how his device stands the test of time.

This volume is recommended to all orthopaedic and hand surgeons and to those undergoing training in these fields.

CDR. ROBERT H. BROWN, MC, USN

HUMAN AND VETERINARY MEDICINE. Vol. II. Edited by S. W. Simmons, Atlanta. Authors: W. J. Hayes, Jr.; S. W. Simmons; and E. F. Knipling. 570 pp., illustrated. Birkhauser Verlag, Basel and Stuttgart. Price Fr. 66.

Nobel Prize Winner Paul Müller is preparing 3

volumes of a monograph on the development and applications of DDT, aided by a number of collaborators in the USA, England and the Continent. Parts of Volume I were in English, parts in German. Volume II has been prepared by 3 experts in the USA to summarize the pharmacology and toxicology, and the control of disease-bearing insects with this product (over 100,000,000 pounds annually in USA). Hayes in 247 pages summarizes the pharmacology, toxicology and pathology of DDT on man and other animals, discusses residue tolerances and methods of labelling, also hazards to domestic animals and wild life, associated with the commercial use of the product, and includes 685 references.

Simmons, in 251 pages, critically summarizes the use of DDT in the prevention of diseases borne by mosquitoes, flies, lice, fleas, ticks, mites and other pest insects. Tables and figures demonstrate the spectacular decrease in many human diseases as a direct result of the application of the product in various countries throughout the world. The reported insect resistance is tabulated with the indication that further research will develop effective chemical derivatives of DDT to meet these changing conditions. He reports 668 references.

Finally, information from 203 references is summarized by Knipling with respect to mammalian toxicity, types of formulation and method of control of specific arthropods on or off the hosts. Relative efficiency as compared to other insecticides is indicated.

JAMES C. MUNCH

THE DEGENERATIVE BACK AND ITS DIFFERENTIAL DIAGNOSIS. By P. M. R. J. Hanraets, M.D. The Netherlands. 690 pp., illustrated. Elsevier Publishing Company, Amsterdam, London, New York, Princeton. Price \$19.95.

This book, written by a neurosurgeon at the St. Ursula Clinic, Wassenaar, The Netherlands, purports to reflect the history of the author's personal approach to the problem of low back pain and sciatica. In the Foreword he states he intends to whet the reader's curiosity as to the unknown and the uncertain in Part I of the book which is entitled "Points of Enquiry." Part II, in general, reviews the literature on the problem of low back pain and sciatica. Part III reflects the development of the author's approach to the problem in his own Clinic.

From this Reviewer's point of view, the book is a labored effort. In general, the author feels that the issue of low back pain and sciatica is beclouded by the patient's general condition, his constitution, his psyche, and the presence or absence of any congenital anomalies in the structural development of his vertebral spine, particularly in the lower lumbar and sacral areas. There is little new in this

book except the fact that the author expresses the necessity for psychiatric evaluation of all patients with low back pain and sciatica for whom surgery is considered. He also beats the drum loudly for strict neurosurgical control of all cases of herniated nuclei pulposi.

This reviewer feels there are better books on the subject than the one presently reviewed and recommends it only to the curious reader with excessive time at his disposal for perusing literature.

DAVID C. KELLSEY, M.D.

TEXTBOOK OF MEDICINE. 10th Ed. Edited by Russell L. Cecil, M.D., and Robert F. Loeb, M.D., 164 contributors. 1665 pp., 182 figs. W. B. Saunders Company, Philadelphia and London. Price \$16.50.

In this Tenth Edition of this well known textbook of medicine thirty-six (36) articles have been added which have not been covered in previous editions.

The thorough manner and conciseness of the articles will be appreciated by busy practitioners and students. Articles are written by authorities in the particular field covered and the editing has made for uniformity throughout the book. References at the end of each article enable the student to seek further knowledge on the subject if he so desires.

"Normal Laboratory Values of Clinical Importance" is a valuable section of the book. The index is, of course, well prepared.

This Tenth Edition upholds the important position that has been previously attained by this outstanding textbook of medicine.

G.M.S.

RADIATION THERAPY. By Walter T. Murphy, M.D., Univ. of Buffalo. 1041 pp., illustrated. W. B. Saunders Company, Philadelphia and London. Price \$25.00.

This book deals with the treatment of cancer. It emphasizes the indications, techniques, results, hazards, and complications of radiation therapy. Written by a skilled therapeutic radiologist for students and practitioners of radiation therapy, it meets an urgent need for a reference text yielding clear-cut answers to specific problems commonly encountered in this field.

The first chapter discusses the physical and biological factors affecting radiation therapy. The remaining chapters are concerned with the treatment of the malignant tumors of specific organs and anatomical areas. The inclusion of descriptions of anatomy, lymphatics, and clinical-pathological aspects of the various tumors provides a basis for understanding the type of treatment recommended.

Numerous case studies with "before-during-and after" photographs of remarkable clarity, diagrams

of the physical plans of treatment, detailed dosimetry, and discussions of the effects of treatment—all correlated with logical and well-designed clinical staging systems—clearly reflect the rich background of experience of the author and permit the student seeking certain facts about a particular problem to apply the text material directly or to extrapolate easily. Generally, the tumor doses prescribed in this book are higher than those which less experienced radiologists might wish to use. However, the author in his preface has called attention to the need for basing treatment regimens on the skill and clinical maturity of the radiotherapist and for altering his suggested programs accordingly.

All in all, I consider this book to be a magnificent production, the finest text appearing to date in this field, and a milestone in the history of radiology.

COL. HARRY L. BERMAN, MC, USA

RADIATION HYGIENE HANDBOOK. Hanson Blatz, Editor-in-Chief, Director, New York City. Office of Radiation Control; 38 contributors. 944 pp., illustrated. McGraw-Hill Book Company, Inc., New York, Toronto, London. Price \$27.50.

Radiological health hygiene is a fast growing speciality which has not yet established a definite training program for itself. I agree with the editor that this term is more descriptive than "radiation health physics" which overemphasizes the physics aspects. The problems of radiation hygiene may cover many different disciplines; physics, engineering, chemistry and radiobiology are among the most common. No one individual should be expected to be an expert in all of them, although he should certainly have some knowledge in each. While this handbook cannot make radiation hygienists expert in all fields it does collect together reference data from a number of sources dealing with radiological hazards, practices and recommendations.

Reference texts in general are not suitable for relaxed evening reading, and this one is no exception. However, it is a valuable source of ready practical answers to almost any question the working health hygienist might want answered. The extensive data in the various National Bureau of Standards Handbooks dealing with radiation is well reviewed. Certain day to day problems are covered in detail, such as the transportation of radioactive materials, disposal of radioactive waste, contamination, and sampling techniques.

All in all, every aspect of radiation hygiene is discussed and the radiation hygienist as well as other individuals responsible for the ever increasing sources of radiation in industry and research would do well to have a copy of this handbook within easy reach for quick authoritative information and guidance.

MAJOR MICHAEL P. DACQUISTO, MC, USA



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